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LIVERPOOL RANGE WIND FARM

Mod-1 Application – Amendment Report – Temporary Project-specific Workers Accommodation Facility

FINAL

January 2024

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Mod-1 Application – Amendment Report – Temporary Project-specific Workers Accommodation Facility

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Tilt Renewables Australia Pty Ltd as trustee for Liverpool Range Wind Farm Project Trust

Project Director: Paul Douglass
Project Manager: Penelope Williams
Report No. 23141/R03
Date: January 2024

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	Paul Douglass	18/12/2024	Paul Douglass	18/12/2024

Executive Summary

Liverpool Range Wind Farm (the Project) is an approved large scale renewable energy project that is owned by Tilt Renewables Australia Pty Ltd as trustee for Liverpool Range Wind Farm Project Trust (Tilt Renewables). The Project is authorised under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by State Significant Development Consent SSD-6696 (Development Consent), which was granted on 27 March 2018 by a delegate of the Minister for Planning (Approved Project). The Project was originally developed by Epuron Pty Ltd and was acquired by Tilt Renewables in March 2019.

The Approved Liverpool Range Wind Farm Project Site Boundary (Project Site Boundary) spans approximately 51,337 hectares (ha) and 67.5 kilometres (km) in length from north to south. The site is located approximately 6 kilometres (km) east of the township of Coolah, New South Wales (NSW) and extends across the Warrumbungle, Upper Hunter and Mid-Western Local Government Areas (LGAs). The Project is located within, and forms a key component of, the Central-West Orana (CWO) Renewable Energy Zone (REZ) declared under the *Electricity Infrastructure Investment Act 2020* (NSW) (refer to **Figure 1.1**).

The Development Consent authorises the construction, operation and decommissioning of up to 267 wind turbines with a maximum tip height of 165 metres (m) and associated infrastructure including a transmission line with an indicative capacity of 330 kilovolts (kV) from within the wind farm to the approved connection point at Ulan.

Since the Development Consent was granted, there have been significant advances in wind turbine technology and Tilt Renewables has undertaken detailed layout review and design optimisation processes to progress the Project towards construction. As a result, the Project has undergone various iterations to arrive at the current layout and design. A modification application (Mod-1 Application) was submitted under Section 4.55(2) of the EP&A Act with the key changes proposed at the time being a reduction in the number of wind turbines to 220, an increase in the maximum blade tip height to 250 m above ground level and amendments to the associated infrastructure (including substations, internal and external transmission lines, site access and ancillary infrastructure) (the Mod-1 Project).

Following public exhibition of the Mod-1 Project and review of submissions received, further consultation with agencies and further design optimisation, an amendment to the Mod-1 Project was proposed to further reduce the number of turbines to 185, reduce the maximum blade tip height to 215 m above ground level, reduce the indicative rotor diameter by 38 m, remove or relocate multiple turbines to avoid or minimise environmental impacts and further infrastructure amendments. This resulted in a reduction in the area of the Development Corridor by approximately 30% and is referred to as the RTS Project.

During the exhibition period of the Mod-1 Application, concern was raised by the community and local government regarding the Project's ability to source and accommodate the workforce required to construct the Project and the potential impact on services within the region. In response to this concern Tilt Renewables engaged Umwelt to prepare an Accommodation and Employment Framework (AEF).

The AEF identified both a skills and short/long term accommodation shortage within the Coolah and Cassilis areas and broader region. To address this issue, Tilt Renewables is proposing a temporary Project-specific workforce accommodation facility (TWA Facility), to facilitate construction. The TWA Facility is located within the Project Site Boundary off Vinegaroy Road approximately 3 km east of the Coolah township within the Warrumbungle Shire Council LGA. The TWA Facility site has been selected based on minimal associated environmental and social impact.

The TWA Facility is the subject of this Amendment Report and is proposed as ancillary development to the Project as it is temporary in nature, occupies a small proportion of the Project Site Boundary, and has a clear nexus with the Project as it is proposed to be operated for the sole purpose of facilitating the construction of the Project.

Tilt Renewables are proposing the current amendment as a direct response to the identified need to address constructability issues associated with the Project. The proposed location for the TWA Facility has been subject to a site selection process aiming to reduce the environmental, social and cultural impacts as far as practicable.

The environmental impact of the TWA Facility can be managed within acceptable environmental standards with the implementation of appropriate controls as documented and implemented in accordance with an Environmental Management Plan (EMP).

The benefits of the Project are clear as outlined in the Mod 1 Assessment Report and RTS Amendment Report (Amendment 1 Report). The additional key benefits of the proposed Amendment include:

- Improve road safety and potential driver fatigue by reducing workforce movements through providing accommodation within the vicinity of the Project.
- Increase in local economic benefit associated with incoming construction workforce utilising facilities and businesses located in proximal towns whilst not impacting local housing stock.
- Local employment generation leading to additional job opportunities associated with the TWA Facility for local community members.

The proposed Amendment will facilitate the construction of the Liverpool Range Wind Farm project which represents one of the largest approved projects within the Central-West Orana Renewable Energy Zone (CWO REZ). In recognition of the size and approved status of the Project, as well as Tilt's track-record in delivering renewable projects, Tilt Renewables and the Project were designated Candidate Foundation Generator (CFG) status in 2022. This provided Tilt Renewables the opportunity to negotiate outcomes with EnergyCo and the Consumer Trustee as part of the rollout of the CWO REZ. The NSW Government has indicated that REZs will play a vital role in delivering affordable energy generation to help prepare the State for the retirement of thermal power stations over the coming decades. The proposed Amendment does not change the overall strategic context of the Project, rather, provides for ancillary development to facilitate the construction of the Project, increasing the financial viability and reducing the associated impacts to the community.

Glossary

Term	Definition
Applicant	Tilt Renewables Australia Pty Ltd as trustee for Liverpool Range Wind Farm Project Trust (Tilt Renewables)
Approved Project	The Project as approved under Development Consent SSD 6696 on 27 March 2018.
Associated Dwelling	Dwelling located on land hosting infrastructure or the Proponent has a negotiated agreement in place with the landowner regarding Project impacts and are therefore associated with the Project.
Conditions of consent	Conditions of the Development Consent SSD 6696 which authorise and regulate the Project.
Development consent	Development Consent SSD 6696 granted under Section 4.38 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) on 27 March 2018
External transmission line	The portion of the transmission line extending from the southern-most collector substation near Rotherwood Road, Cassilis, south to the connection substation at Ulan, consisting of an overhead powerline of up to 330 kV, supported by poles or towers and located within a 60 m wide easement.
Internal transmission line	The portion of the transmission line extending from the northwest of the Project site to the southernmost collector substation near Rotherwood Road, Cassilis, consisting of an overhead powerline of up to 330 kV, supported by poles or towers and located within a 60 m wide easement.
Mod-1 Assessment Report	The report titled *Liverpool Range Wind Farm Modification Assessment Report (Mod-1)* and dated September 2022.
Mod-1 Project	The project as described in the application to modify Development Consent SSD 6696 and Mod-1 Assessment Report.
Non-Associated Dwelling	Dwellings located outside of the Project Site Boundary and not associated with the Project.
Original EIS	As defined in Development Consent SSD 6696, this includes the Environmental Impact Statement titled *Liverpool Range Wind Farm Environmental Assessment*, prepared by Epuron Pty Ltd and dated July 2014, as modified by the *Liverpool Range Wind Farm Response to Submissions.*
Proposed Amendment	The proposed amendment outlined in this Amendment Report (ancillary development providing a TWA Facility).
RTS development corridor	A buffer area around the RTS indicative development footprint incorporating areas of adjoining land to allow for micro-siting of infrastructure.
RTS indicative development footprint	The estimated ground disturbance and vegetation removal required for construction of the RTS Project, including turbine hardstands, internal access tracks and other temporary and permanent ancillary infrastructure, collector substations and ancillary equipment, and internal and external transmission lines.
RTS Project	The Project as described in this report (incorporating the Project Amendments to the Mod-1 Project – referred to as Amendment 1).

Term	Definition
TWA Facility	Proposed temporary workforce accommodation facility to accommodate approximately a peak construction workforce required to construct the Liverpool Range Wind Farm project, subject of this Amendment Report.
The Project	Liverpool Range Wind Farm Project
Mod 1/RTS Project Site Boundary	Project Site Boundary

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1.0 Introduction

1.1 Background

Liverpool Range Wind Farm (the Project) is an approved large scale renewable energy project that is owned by Tilt Renewables Australia Pty Ltd as trustee for Liverpool Range Wind Farm Project Trust (Tilt Renewables). The Project is authorised under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by State Significant Development Consent SSD-6696 (Development Consent), which was granted on 27 March 2018 by a delegate of the Minister for Planning (Approved Project). The Project was originally developed by Epuron Pty Ltd and was acquired by Tilt Renewables in March 2019.

The Approved Liverpool Range Wind Farm Project Site Boundary (Project Site Boundary) spans approximately 51,337 hectares (ha) and 67.5 kilometres (km) in length from north to south. The site is located approximately 6 kilometres (km) east of the township of Coolah, New South Wales (NSW) and extends across the Warrumbungle, Upper Hunter and Mid-Western Local Government Areas (LGAs). The Project is located within, and forms a key component of, the Central-West Orana (CWO) Renewable Energy Zone (REZ) declared under the *Electricity Infrastructure Investment Act 2020* (NSW) (refer to **Figure 1.1**).

The Development Consent authorises the construction, operation and decommissioning of up to 267 wind turbines with a maximum tip height of 165 metres (m) and associated infrastructure including a transmission line with an indicative capacity of 330 kilovolts (kV) from within the wind farm to the approved connection point at Ulan.

Since the Development Consent was granted, there have been significant advances in wind turbine technology and Tilt Renewables has undertaken detailed layout review and design optimisation processes to progress the Project towards construction. As a result, the Project has undergone various iterations to arrive at the current layout and design. The approval process to date is summarised in **Table 1.1** below.

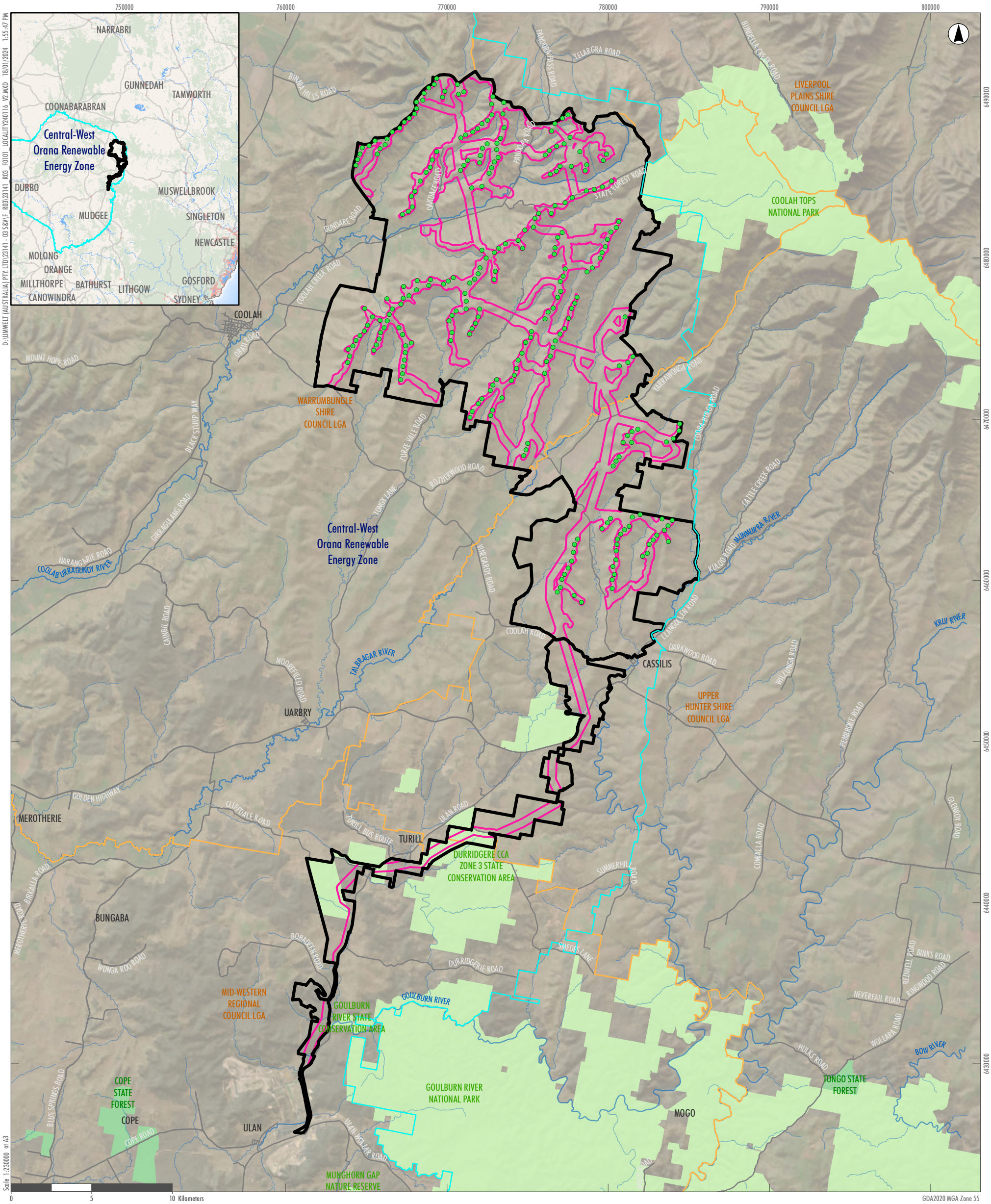
Table 1.1 Approval Process to date

Date	Project name	Key features
2018	Approved Project (SSD-6696)	State Significant Development Consent SSD 6696 granted to allow for the construction, operation and decommissioning of up to 267 wind turbines with a maximum tip height of 165 m and associated infrastructure including a transmission line with an indicative capacity of 330 kV from within the wind farm to the approved connection point at Ulan.
2022	Modification 1 (Mod-1 Project) (Undetermined)	A modification application was submitted under Section 4.55(2) of the EP&A Act the key changes proposed in the Mod-1 Project were a reduction in the number of wind turbines to 220, an increase in the maximum blade tip height to 250 m above ground level and amendments to the associated infrastructure (including substations, internal and external transmission lines, site access and ancillary infrastructure).

Date	Project name	Key features
2023	Modification 1 - Amendment 1 (RTS Project)	Following public exhibition of the Mod-1 Project and review of submissions received, further consultation with agencies and further design optimisation, an amendment to the Mod-1 Project was proposed to further reduce the number of turbines to 185, reduce the maximum blade tip height to 215 m above ground level, reduce the indicative rotor diameter by 38 m, remove or relocate multiple turbines to avoid or minimise environmental impacts and further infrastructure amendments. This resulted in a reduction in the area of the Development Corridor by approximately 30%.
2023	Modification 1 - Amendment 2 - TWA Facility	Amendment 2 involves the proposed addition of an onsite temporary workforce accommodation facility (TWA) as ancillary component of the Project. Due to an identified shortage of suitably skilled workforce and rental accommodation in the local region, and in response to government and community feedback on the Mod-1 Project and the RTS Project, Amendment 2 proposes the addition of an onsite TWA Facility. The proposed TWA Facility is the subject of this Amendment Report.

It should be noted that following the exhibition of Modification 1 and the subsequent preparation of Amendment 1 associated with the RTS Project it was agreed with the Department of Planning and Environment (DPE)[1] that Modification 1 would remain undetermined whilst Amendment 2 (TWA Facility) was prepared and submitted. Tilt Renewables are also proposing a project-specific quarry to supply resources to construct the Project which is subject to a separate assessment and approval process.

[1] Note that following the recent Machinery of Government changes as of 1 January 2024 the Planning department of the former DPE is now within Department of Planning, Housing and Infrastructure (DPHI).



Legend

- Approved Site Boundary
- Approved Development Corridor
- Central-West Orana Renewable Energy Zone
- Local Government Boundary
- National Parks (NPWS Estate)
- State Forest
- Drainage Line
- Public Road
- Approved Wind Turbines

FIGURE 1.1

Locality Plan

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

1.2 The Project

The most recently exhibited amended Project (the RTS Project) is broadly described as the construction, operation, replacement or upgrade, and decommissioning of a wind farm, including transmission line and ancillary infrastructure, consisting of the following key components:

- **Wind Turbines**: up to 185 wind turbines with a maximum blade tip height of 215 metres, including an adjacent hardstand area for lift cranes and a material laydown.
- **Collector Substations**: up to seven collection substations that step-up the voltage of the reticulation cabling (typically 33 kV) to the transmission line voltage (anticipated to be 330 kV). The collector substations are comprised of multiple components including transformers, circuit breakers, bus bars, and gantries, and are anticipated to occupy a 3D envelope approximately 70 m long x 60 m wide x 9 m high. The steel gantries that support the incoming/outgoing power lines are anticipated to be approximately 25 m high.

  In the event the RTS Project connects into the CWO REZ transmission line the southern collector substation located off Rotherwood Road, Cassilis will convert to a connection substation, and the approved external transmission line to Ulan and associated connection substation/switchyard at Ulan would no longer be required.
- **Connection Substation** (also referred to as Switchyard): a single 330 kV connection substation located at the southern end of the RTS Project Site Boundary at Ulan, to facilitate connection into the existing Transgrid 330 kV Wellington - Wollar transmission line. Similar to substations, switching stations typically contain bus bars, circuit breakers and steel gantries. The switching station is anticipated to occupy a 3D envelope approximately 150 m long x 100 m wide x 9 m high. Steel gantries that support the power lines are anticipated to be approximately 25 m high.

  In the event the RTS Project connects into the CWO REZ transmission line the approved external transmission line to Ulan and associated connection substation/switchyard at Ulan would no longer be required.
- **Internal Transmission Line**: overhead powerline of up to 330 kV, supported by poles or towers and located within a 60 m wide easement, that extends from the northwest of the Project site to the southern-most collector substation proposed near Rotherwood Road, Cassilis. The supporting poles are anticipated to be of a steel construction with an indicative height of approximately 30–50 m, generally located at intervals of approximately 300 m wherever practicable. Steel towers may need to be used, particularly in complex terrain, as they allow for longer spans and reduced number of supporting structures. Steel poles and towers are anticipated to have an indicative height of approximately 40–50 m.
- **External Transmission Line**: overhead powerline of up to 330 kV, supported by poles or towers and located within a 60 m wide easement, that extends from the southern-most collector substation proposed near Rotherwood Road, Cassilis south to the approved connection substation at Ulan. The anticipated tower or pole design is as described above for the Internal Transmission Line. Approval is also being sought to connect the RTS Project into the CWO REZ transmission line (and remove the external transmission line connection to Ulan) in circumstances where the delivery timeframe for the CWO REZ transmission line aligns with the Liverpool Range Wind Farm project.

- **Reticulation cabling**: underground electrical reticulation cabling, and potentially some overhead powerlines, that provide an electrical connection between the wind turbines and the collector substations. Reticulation cabling is typically rated at 33 kV. Typically underground reticulation cabling is buried in one or more trenches adjacent to access track batters.

- **Access Tracks**: access tracks, typically with a trafficable width of 5.5–6 m, to provide access from the public road network to wind farm and transmission line infrastructure and meteorological masts, and include required cut/fill batters and drainage infrastructure.

- **Site Access Points**: provision of the following site access points off public roads:

    - up to 34 site access points from nearby public roads to facilitate construction and ongoing maintenance of the wind farm components located north of the Golden Highway

    - up to 40 site access points from nearby public roads to facilitate construction and ongoing maintenance of the proposed External Transmission Line located south of the Golden Highway.

- **Operation and Maintenance (O&M) Facilities**: up to three O&M facilities incorporating a control room, maintenance and equipment storage facilities. The O&M facility is used to store spare parts and other equipment used for ongoing maintenance of the wind farm, as well as Supervisory Control and Data Acquisition (SCADA) equipment to monitor and control the electrical performance of the wind farm. The O&M facility is anticipated to occupy a 3D envelope approximately 45 m long x 30 m wide x 15 m high.

- **Temporary Construction Compound/Laydown Area/Concrete Batch Plants**: Up to 10 temporary construction facilities, including temporary concrete batching plants, rock crushing equipment, temporary laydown facilities, and construction compounds, of which nine are located within the Wind Farm Site and one located off Cliffdale Road, Turill within the External Transmission Line Site Boundary.

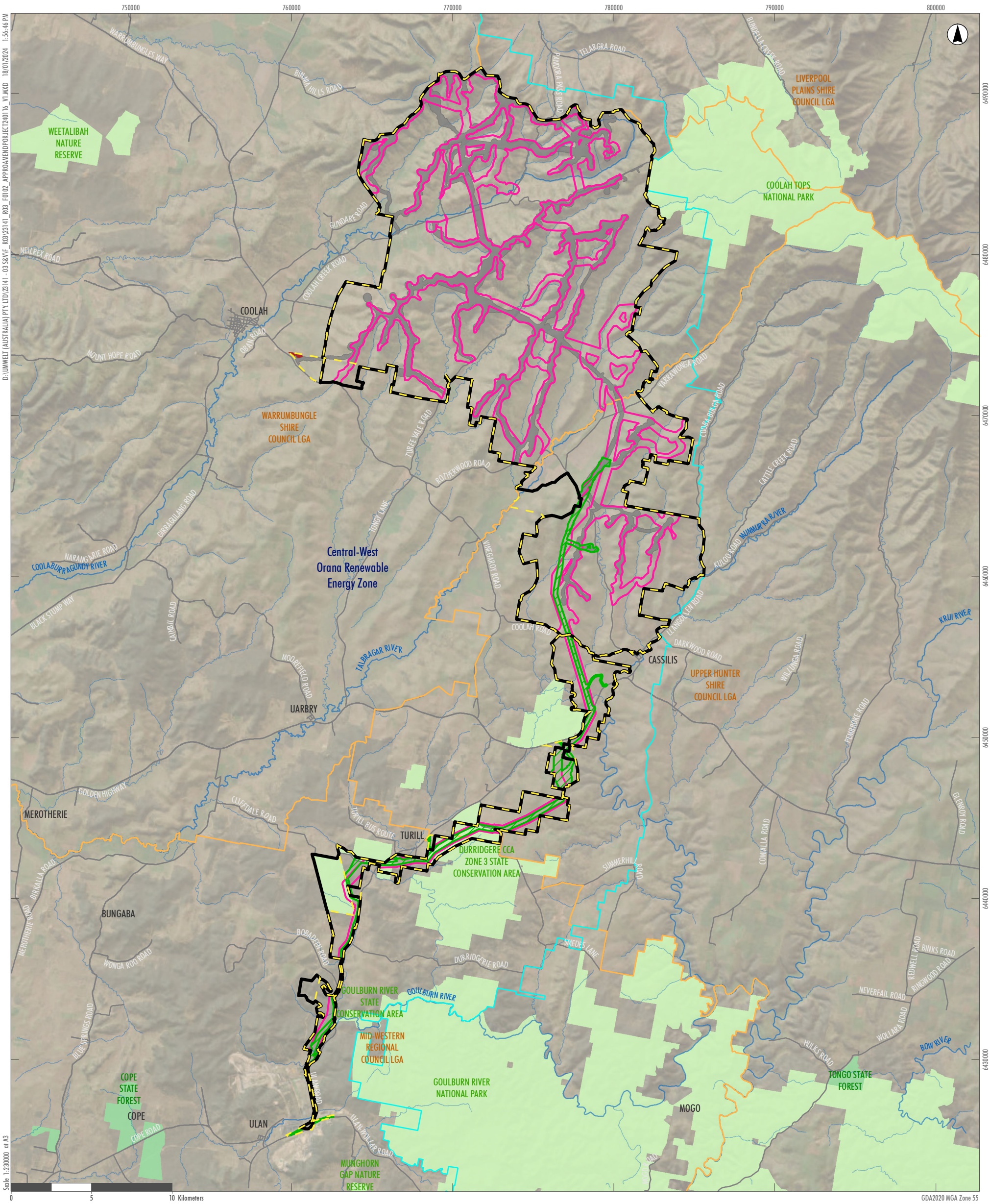
- **Public Road Upgrades/Repairs**: upgrades/repairs to Local and Regional public roads, intersections and associated structures, in proximity to the RTS Project required for the delivery, installation and maintenance of wind turbines, transmission lines, and related infrastructure, in accordance with upgrade/repair standards as agreed with relevant roads authorities.

- **Permanent Wind Monitoring Masts (Met Masts)**: up to 10 permanent Power Curve Validation (PCV) met masts to the final hub height, and associated access tracks.

- **Temporary Site Calibration Met Masts**: up to 10 temporary site calibration met masts to the final hub height, to be located at a subset of the turbine locations and removed prior to erection of each relevant turbine.

- **Subdivision of Land**: subdivision of land within the RTS Project Site Boundary to create new separate lots for the connection and collector substations, and associated ancillary facilities.

The proposed amendments to the Approved Project layout have resulted in a revised development corridor. A comparison of the Approved and Amended Development Corridor is provided in **Figure 1.2**.



Legend

Approved Project

- Approved Site Boundary
- Approved Development Corridor

Amended Project

- Amended Site Boundary
- Amended Development Corridor – External Transmission Line
- Amended Development Corridor – Wind Farm
- Amended Development Corridor – TWA Facility

- Central-West Orana Renewable Energy Zone
- Local Government Boundary
- National Parks (NPWS Estate)
- State Forest
- Public Road
- Drainage Line

FIGURE 1.2

Approved and Amended Project Development Corridor

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

1.3 Proposed Amendment

During the exhibition period of the Modification 1, concern was raised by the community and local government regarding the ability to accommodate and achieve the workforce required to construct the Project and the potential impact on services within the region. In response to this concern Tilt Renewables engaged Umwelt to prepare and Accommodation and Employment Framework (AEF). The AEF identified both a skills and short/long term accommodation shortage within the Coolah and Cassilis areas and broader region. To address this issue, Tilt Renewables is proposing a Project Specific, temporary workforce accommodation facility (TWA Facility) as an ancillary component of the Project, to facilitate construction.

The proposed TWA Facility would be located on a rural privately owned property (Lot 160 Deposited Plan 750744), referred to as the TWA Site, located within the Project Site Boundary off Vinegaroy Road approximately 3 km east of the Coolah township within the Warrumbungle Shire Council LGA. The TWA Site is predominately cleared of vegetation and has been subject to extensive cropping activities associated with previous and current agricultural use. Tilt Renewables investigated a number of potential locations for a TWA Facility in and around Coolah and Cassilis townships. The proposed site has been selected based on the minimal associated environmental and social impacts. Selection criteria for the site and project alternatives are discussed further in **Section 2.4**.

The proposed amendment is described in detail in **Section 3.0** and a summary of key aspects of the TWA Facility is provided in **Table 1.2**.

Table 1.2 Overview of the TWA Facility

Aspect	Proposed TWA Facility
Life of TWA	For the duration of the construction phase of the wind farm, approximately four years.
Area	Total area of approximately 6 ha (allowing 1 ha per 100 rooms) with a total capacity of approximately 600 rooms, which considers a construction peak workforce of approximately 550 and additional rooms for staff required to operate and maintain the TWA Facility. The Facility is generally proposed to be comprised of the following: • Pre-fabricated rooms (approximately 14 m long, 3.2 m wide and 3.2 m high). • Kitchen and dining room facility. • Administration buildings comprised of offices and reception area. • Recreational facilities such as a gymnasium, a bar area and BBQ facilities. • Maintenance and cleaning buildings for housekeeping equipment and laundry facilities.
Site access	Accessed from Vinegaroy Road via the internal Project access tracks proposed and assessed as part of the broader Project. The TWA Facility will use the same site access point (SAP) as that proposed to access the D Cluster of turbines (SAP ID# 113/114). A basic access right / basic access left (BAR / BAL) intersection turn treatment is likely to be required at this site access point.
Timing	The TWA Facility will be progressively built in a sequenced manner that mirrors that ramp-up of the construction workforce required to construct the Project.

Aspect	Proposed TWA Facility
Employment	Construction of the TWA Facility will require a peak of approximately 36 construction workers. Ongoing operation will require approximately 30 staff. Accommodation will be provided on site for staff that do not reside locally.
Hours of operation	The TWA Facility will operate 24/7 for the entire construction period (approximately 4 years). Traffic movements from the TWA Facility site will align with construction hours associated with the Project (peak AM 7 am, peak PM 6 pm).
Rehabilitation and final landform	Following completion of the construction of the Project, the TWA Facility would be decommissioned, and the site rehabilitated. Due to the transportable nature of the buildings, this can include either removal and disassembled or moved to another project/location (if required). The site will be rehabilitated to form a safe, stable and non-polluting landform, restoring the land capability of the previous agricultural land use.

1.4 Report Structure

This Amendment Report is structured in accordance with the *State significant development guidelines – preparing an amendment report* (the Guidelines) (DPE, 2022) as presented in **Table 1.3**.

Table 1.3 Report Structure

Section	Description
Section 1.0	Provides a brief summary of the approval process to date, the current Project and the proposed amendments.
Section 2.0	Identifies any changes to the strategic context relevant to the proposed amendment.
Section 3.0	Describes the proposed Amendment in detail.
Section 4.0	Identifies any changes to the statutory context as a result of the proposed Amendment.
Section 5.0	Summarises the stakeholder engagement that has been undertaken during the development of the proposed amendment.
Section 6.0	Provides a summary of any changes in environmental, social and economic impacts as a result of the proposed Amendment.
Section 7.0	Provides an updated justification for the amended Project.
Section 8.0	Provides a list of references used during the preparation of this report.
Appendices	Supporting documentation and technical reports.

2.0 Strategic Context

2.1 Strategic Context for the Project

The strategic context and need for the Approved Project were described in Section 4 of the Environmental Impact Statement (EIS) (and Addendum) prepared in 2014 (and 2017), updated in Section 5 of the Mod-1 Assessment Report prepared in September 2022, and further updated in Section 2.0 of the Amendment Report for the RTS Project prepared in September 2023. In summary, the Project (as modified and amended) is aligned with the NSW and Commonwealth governments' energy and climate policies and will make a meaningful contribution to achieving the goal of net zero emissions by 2050. The previous modifications and amendment proposed to the Approved Project will increase the overall generation capacity of the Project while reducing the maximum number of turbines and ensure that the Project is fully constructible. The current amendment provides for ancillary development of the TWA Facility to enable the construction of the Project, increasing the financial viability and reducing the associated impacts.

2.2 Strategic Context for the Amendment

A large number of projects are currently proposed within the Central-West Orana REZ including those in development, under assessment, being constructed or in operation. While these projects bring significant benefit to the region through investment and employment opportunities, demand for services particularly accommodation has the potential to cause significant impact, both in relation to project only and cumulative impact.

The AEF prepared to support the Modification 1 Project has identified that there is not enough accommodation within the region to support the expected construction workforce for the Liverpool Range Wind Farm Project without significantly disrupting the local tourism and short and long-term accommodation market. When considering historical occupancy rates and the presence of other concurrent projects, analysis has concluded that around 100 workers have the potential to be housed in existing proximal short-term accommodation without unduly impacting existing tourism and other short-term accommodation users.

Additionally, low unemployment rate across the CWO REZ will make it difficult to source a significant proportion of the suitably skilled workforce required to construct the Liverpool Range Wind Farm Project from within the locality. This challenge is exacerbated by the relative geographic isolation of the Project, on the eastern periphery of the CWO REZ, and significantly detached from the major population centres of Dubbo and Mudgee.

The key recommendations from the AEF include:

1. Establish a temporary workforce accommodation facility close to the site to accommodate the incoming non-resident workforce.
2. Prioritise sustainable use of local accommodation a maximum of 75 minutes-drive or 100 km from the development (i.e. Merriwa, Cassilis, Dunedoo, Mudgee, Gulgong, Coolah and Coonabarabran).
3. Reduce or avoid upward pressure on housing prices, rental costs and demand that may result from development activities by limiting the amount of rental and short-term accommodation consumed by non-resident workforces.

To address this issue Tilt Renewables are proposing the current amendment to the Mod-1 Application to provide accommodation for the Project workforce as ancillary development to the broader wind farm project. The amendment will provide accommodation for the Project workforce only. Given the shortfall in available local workforce and accommodation supply the amendment is required to facilitate the construction of the Project. The amendment will also address management and mitigation requirements associated with potential cumulative social and economic impacts.

2.2.1 Regional Housing Taskforce

In 2021 the NSW Government established the Regional Housing Taskforce to address identified pressure on the supply and affordability of housing in Regional NSW. The Findings Report (NSW Government, 2021) from the initial investigation acknowledges that regional housing markets are vulnerable to spikes in demand caused by temporary workers especially in the construction sectors. Stakeholders consulted during the investigation indicated that the planning system needs to assess the housing impacts of State and Regionally Significant Development, to review approval pathways and controls for various types of temporary and short-term accommodation, to effectively regulate short term rental accommodation, and to incentivise the provision of long-term rental accommodation (NSW Government, 2021).

The relevant recommendation resulting from the report is to Implementing early and regular assessment of and mechanisms to address additional housing demand associated with State Significant Development in regional NSW across construction and operational stages.

The proposed amendment aligns with the recommendations outlined by the Regional Housing Taskforce, addressing the assessment and approval of temporary construction workforce accommodation required for the Project, addressing the shortfall in regional temporary housing availability.

2.2.2 Draft Temporary and Seasonal Works Accommodation Toolkit

In response to the Regional Housing Taskforce highlighting the need for a standardised planning approach for seasonal and temporary works accommodation the NSW Government have prepared the draft Temporary and Seasonal Workers Accommodation Toolkit (the Toolkit). The Toolkit is proposed to provide a planning framework and guidelines to help guide regional Councils with land use planning to provide housing for temporary and seasonal workers. The Toolkit specifically proposes changes to allow construction workforce accommodation, associated with renewable energy projects, in certain rural zones within the REZ, providing clear development permissibility. The Toolkit was exhibited in between August and September 2023, and although still draft and proposed changes have not been implemented by Local Council, the proposed amendment aligns with the proposed guidance outlined in the draft Toolkit, including:

- Location within appropriate zone (RU1 Primary Production Zone) providing an appropriate location and design.
- The TWA Facility is appropriately sited to minimise land use conflict and impact on the locality as far as practicable.
- The TWA Facility is temporary, and the site will be rehabilitated following construction of the Project allowing future use of the land.

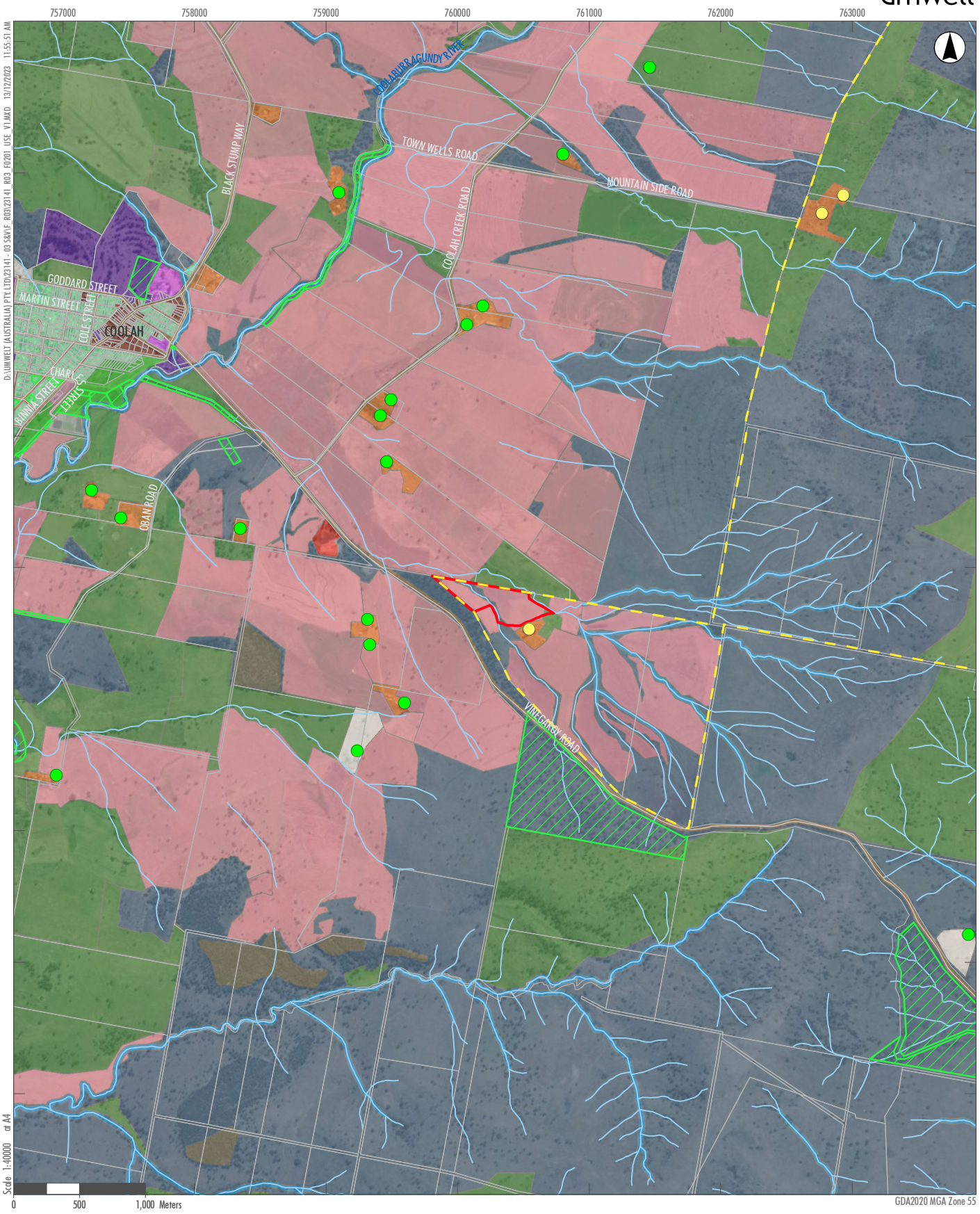
2.3 Site Context

The TWA Facility and associated access road are located within the Project Site Boundary and is considered ancillary development associated with the wind farm as it is temporary in nature, occupies a small proportion of the Project Site Boundary, and has a clear nexus with the Project as it is proposed to be operated for the sole purposes of providing accommodation for the Project's workforce during construction. The proposed TWA site is located on Lot 160 DP 750744 which is approximately 10 ha, refer to **Figure 2.1**. The site is zoned RU1 Primary Production under the Warrumbungle Local Environmental Plan (LEP), 2013, refer to **Figure 2.2**).

Land use surrounding the TWA site comprises agricultural activities, including cattle breeding, wool and lamb production, grazing and cropping, consistent with the RU1 Primary Production land zoning. 18 non-associated residences are located within 5 km of the TWA site with the closest non-associated dwelling located approximately 600 m to the southwest (refer to **Figure 2.1**). The TWA site has been largely cleared of vegetation due to extensive cultivation for agricultural practices and is currently subject to cattle grazing.

The TWA site sits within lower hill slopes and within in a landform pattern of low rolling hills. A fourth order tributary runs along the northern boundary of the site and a second order tributary runs through the centre (refer to **Figure 2.3**). Both drainage lines are east west running tributaries of the Coolaburragundy River, a perennial sixth order water course located 2.2 km to the west of this portion of the TWA Facility site.

Land and Soil capability classifications across the proposed TWA site are Class 3 (high capability land) and Class 4 (moderate capability land), refer to **Figure 2.4**. Class 3 land has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation. Class 4 land has moderate to severe soil limitation, where the land is "generally not capable of sustaining high impact land uses unless using specified management practices with high knowledge, expertise, inputs and investment" (DPE, 2021).



Legend

- Development Corridor – TWA
- Liverpool Range Wind Farm Project Site
- Property Boundary
- Road
- Drainage Line
- Crown Land
- Non-associated Dwelling
- Associated Dwelling

Land Use

- 1.3.3 Residual native cover
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.2.1 Native/exotic pasture mosaic
- 3.3.0 Cropping
- 5.3.4 Bulk grain storage
- 5.4.0 Residential and farm infrastructure
- 5.4.1 Urban residential
- 5.4.3 Rural residential without agriculture
- 5.5.1 Commercial services
- 5.5.2 Public services
- 5.5.3 Recreation and culture
- 5.7.2 Roads
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.3.0 River

FIGURE 2.1

Land Use

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

Legend

- Development Corridor – TWA
- Liverpool Range Wind Farm Project Site
- Property Boundary
- Road
- Drainage Line

Land Zone

- RU1 - Primary Production

FIGURE 2.2

Land Zoning

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

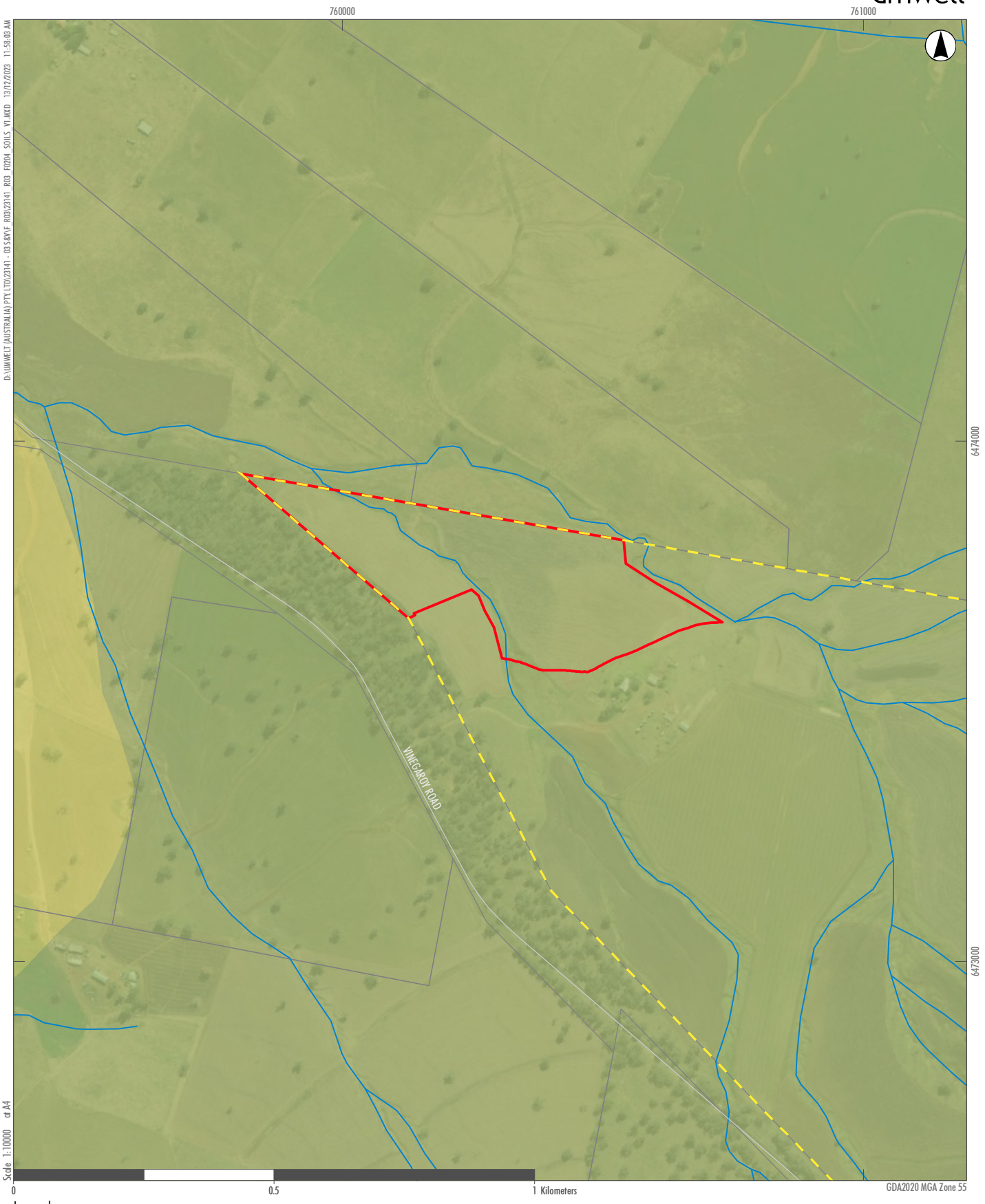
Legend

- Development Corridor – TWA
- Liverpool Range Wind Farm Project Site
- Property Boundary
- Road
- Drainage Line
- Contours

FIGURE 2.3

Topography and Hydrology

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)



Legend

- Development Corridor – TWA
- Liverpool Range Wind Farm Project Site
- Property Boundary
- Road
- Drainage Line

Most Limiting LSC

- 1 - Very slight to negligible limitations
- 2 - Slight but significant limitations
- 3 - Moderate limitations
- 4 - Moderate to severe limitations
- 5 - Severe limitations
- 6 - Very severe limitations
- 7 - Extremely severe limitations
- 8 - Extreme limitations
- Not assessed
- Water

FIGURE 2.4

Land and Soil Capability

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

2.4 Alternatives

Various alternatives have been investigated to accommodate the Project workforce required to construct the Project, including:

- Do nothing (source accommodation for the workforce within the region surrounding the Project Area – as approved).
- Investigation of alternate TWA sites within and in close proximity to the Project Site Boundary.

These alternatives are discussed in the following sections.

2.4.1 'Do nothing' Alternative

The AEF has identified substantial housing, accommodation and employment and procurement constraints in the social locality, linked to the Project's remote location and the presence of concurrent proximal projects. The AEF indicates that the existing local short-term accommodation could house approximately 100 construction workers without impacting on the tourism industry and existing short-term accommodation users in the region.

As discussed in **Section 2.2** above, the proposed Amendment will provide on-site accommodation for the Project construction workforce that do not reside locally, addressing potential cumulative impact issues associated with accommodation and employment and resulting in improved outcomes for the local and regional community. Given the identified need to provide accommodation for the Project workforce, the 'do nothing' alternative is not a viable Project option.

2.4.2 Alternative Locations

Tilt Renewables investigated multiple potential TWA sites within the vicinity of the Coolah and Cassilis townships. Many of the sites were identified as having potential environmental and social constraints and were removed from consideration early in the assessment process. Following initial investigation and consultation with both Warrumbungle and Upper Hunter Council two potential TWA Facility sites (currently proposed TWA site near Coolah and an alternate TWA site near Cassilis were subject to detailed analysis and community consultation. The Cassilis TWA site is located south of the Cassilis township, approximately 800 m from the Cassilis Road/Golden Highway intersection.

Tilt Renewables applied the selection criteria outlined in **Table 2.1** to assist with the site selection process to all potential TWA sites (the key for the assessment outcome rating is provided in **Table 2.2**).

Table 2.1 Selection Criteria Analysis

Aspect	Selection Criteria	Assessment Outcome	
		Coolah	Cassilis
Land use / zoning	Freehold land with minimal land use restrictions (preferably in a Rural Zone).		
Land area	Minimum of 6 ha to accommodate a TWA Facility with a capacity of approximately 600 personnel.		

Aspect	Selection Criteria	Assessment Outcome	
		Coolah	Cassilis
Proximity to work sites	Travel time to construction site less than 30 minutes wherever possible.		
Hazards (flooding and bushfire)	Minimal hazard potential when compared to surrounding areas. Largely cleared of tree vegetation. Allows for siting infrastructure outside of 1% annual exceedance probability (AEP) flood depths.		
Ecological constraints	No impacts to listed threatened flora species or threatened ecological communities under relevant State and Commonwealth legislation.		
Heritage constraints	Minimal presence of Aboriginal and non-Aboriginal heritage items or sites.		
Accessibility	Connectivity to existing road network to facilitate construction and use of facility. Limited use of local road network.		
Available services / utilities	Existing access to electricity essential. Access to water, sewer services, and mobile reception preferable.		
Topography	Minimal slope to avoid excessive earthworks in establishing the facility.		
Contamination	Low risk of contaminated soils and acid sulphate soils.		
Social impact (noise and visual)	Maximise distance to nearby dwellings and sensitive land uses (e.g. nursing homes, child care) to avoid/minimise impacts on nearby residents and the local community.		
Community engagement and support	The facility is considered to be generally acceptable by nearby residents and the local community.		

Table 2.2 Assessment Outcome Key

Assessment Outcome	Colour
Selection Criteria Not Satisfied	**Red**
Selection Criteria Partially Satisfied	**Orange**
Selection Criteria Satisfied	**Green**

Following community consultation organised by Tilt Renewables and held in Coolah and Cassilis between 24–26 October 2023 (detailed in **Section 5.0**), feedback was received from the community which indicated only 8.8% of the 93 respondents recommended the Cassilis TWA Facility site. Additionally, approximately 45% of respondents ranking the potential negative impacts of the Cassilis site as 'extremely significant'. Following further analysis of the feedback received, Tilt Renewables is now proceeding with an amendment to the Mod-1 application to include the proposed TWA Facility at the Coolah site, which scores highly against the selection criteria set out in **Table 2.1**.

3.0 Description of the Amendment

3.1 Overview

A comparison between the RTS Project (which incorporates Amendment 1) and the proposed Amendment 2 (to incorporate the TWA Facility) is provided in **Table 3.1**.

Table 3.1 Comparison between RTS Project and Proposed Amendment 2

Project Element	RTS Project	Proposed Amendment
Site boundary and development corridor		
Project Site Boundary	51,389 ha	No change
Development Corridor	8,718.2 ha	8,733.7 ha, comprised of: • RTS Project: 7323.9 ha • External Transmission Line: 1,540.5 ha • TWA Facility: 14.6 ha. The development corridor associated with the Project (as submitted with the RTS Amendment Report) has been modified to capture these areas
Turbine parameters and wind farm layout		
Maximum number of turbines	185	No change
Maximum blade tip height (AGL)	215 m	No change
Indicative hub height	129 m	No change
Indicative rotor diameter	172 m	No change
Indicative minimum blade ground clearance	40 m	No change
Indicative rotor swept area (RSA) per turbine	23,235 m^2	No change
Indicative total RSA for wind farm	4,298,475 m^2	No change
Total generating capacity	1,332 MW	No change
Ancillary infrastructure		
Wind farm access track length	246.4 km	No change
Internal transmission line length	41.7 km	No change
Reticulation cabling length	173.5 km (underground)	No change
Permanent PCV met masts	Up to 10	No change
Collector substations	Up to 7	No change
O&M facilities	Up to 3	No change
Temporary site calibration met masts	Up to 10	No change
Temporary concrete batch plants	Up to 9	No change

Project Element	RTS Project	Proposed Amendment
Temporary construction compound/laydown areas	Up to 9	No change
Ancillary Development	-	Construction and operation of an on-site TWA Facility
External transmission line and connection infrastructure		
External transmission line length	54.6 km	No change
Access track length	57.8 km	No change
Temporary concrete batch plants	Up to 1	No change
Temporary construction compound/ laydown areas	Up to 1	No change
Connection substation/switchyard	Up to 1	No change
Indicative development footprint		
Indicative development footprint (wind farm and external transmission line)	Combined total of 1,609.4 ha	Combined total of 1,619 ha, comprised of: • External Transmission Line: 244.4 ha. • Wind Farm (RTS): 1,365 ha. • TWA Facility: 9.6 ha.
Indicative development footprint (public road upgrades)	184.7 ha	No change
Preferred transport route and road upgrades		
Over-dimensional (OD) and heavy vehicle access route	Preferred route identified with minor changes from Approved Project	No change
Indicative OSOM haulage route between Port of Newcastle and Project site	EnergyCo to be responsible for separately assessing and carrying out all road upgrades for the OSOM haulage route from Port of Newcastle to Cassilis	No change
Construction details		
Construction hours	Monday to Friday, 7 am to 6 pm Saturday, 8 am to 1 pm Sunday and Public Holidays, no work proposed	No change to approved construction hours associated with the wind farm.
Estimated construction workforce	Approximately 550 peak workforce	Approximately 36 additional staff associated with the TWA Facility
Estimated construction duration	Approximately 4 years	No change
Operational details		
Estimated operational workforce	Approximately 40	No change
Estimated project life	Approximately 30 years	No change

3.2 Detailed Description of Amendment

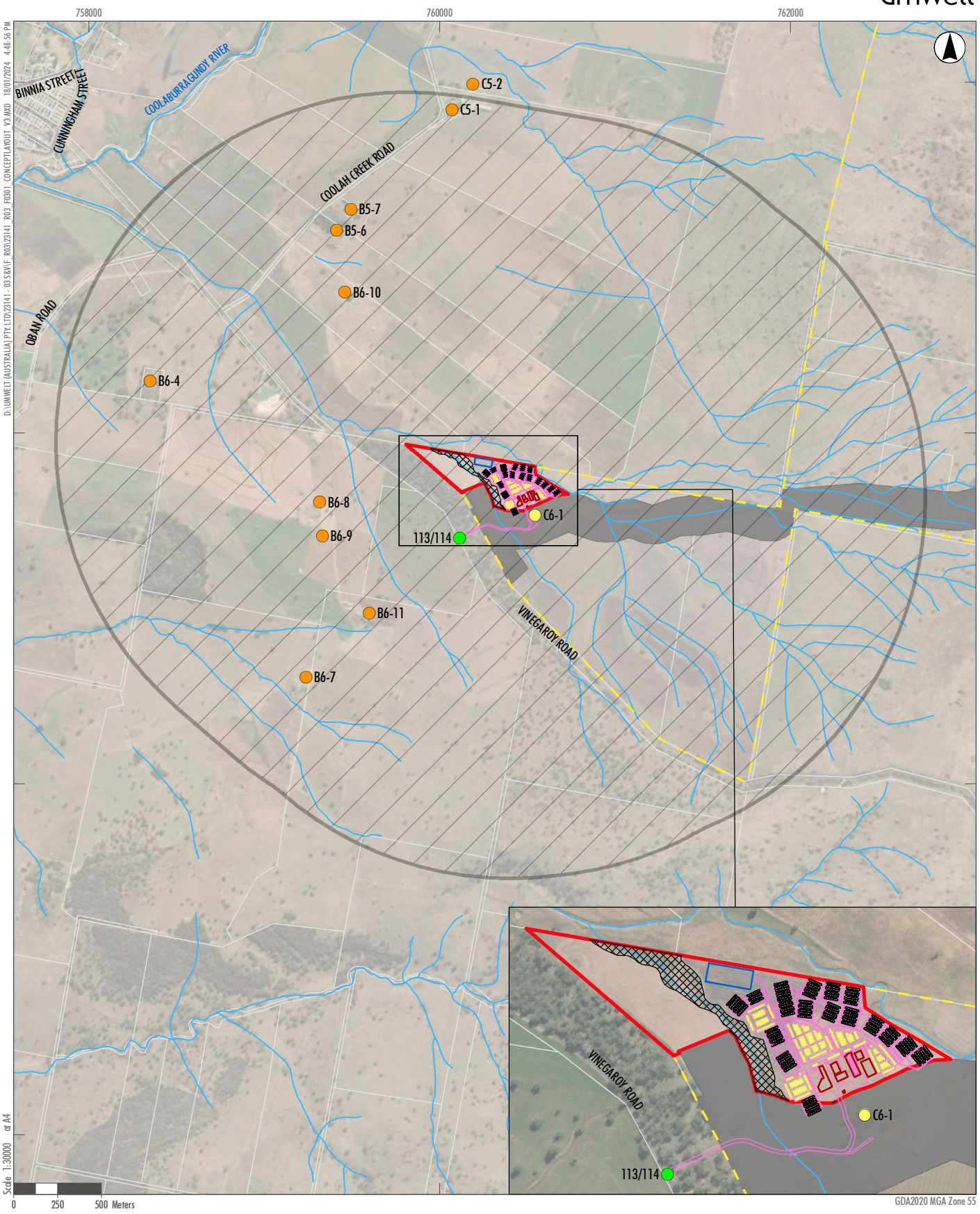
3.2.1 Conceptual Layout

The conceptual layout for the TWA Facility site is shown in **Figure 3.1** and is proposed to include the following:

- Pre-fabricated rooms.
- Kitchen and dining facilities.
- Administration buildings comprised of offices and reception.
- Linen and chemical storage rooms.
- Maintenance and cleaning buildings for housekeeping equipment and laundry facilities.
- Ablutions.
- Waste disposal facilities.
- Backup power generation and fuel storage.
- Water storage/supply if required.
- Car, bus and truck parking.
- Recreational facilities such as a gymnasium, a bar area and BBQ facilities.

The conceptual layout for the TWA Facility has been prepared to inform the detailed specialist assessments only and will be confirmed through detailed design and once a Balance of Plant (BoP) contractor has been selected to construct the Project. The conceptual layout is provided in **Appendix B**. The design assumes that approximately 600 rooms will be required during peak construction resulting in a total disturbance area of approximately 6 ha. This total includes rooms for the peak workforce required, as well as rooms for the staff necessary to operate and maintain the TWA Facility that do not reside locally. The modular design of the proposed building will allow for the TWA facility to be constructed progressively aligning with the anticipated ramp-up of the construction workforce associated with the Project.

All buildings will have emergency lighting, smoke alarms and firefighting capability in accordance with the Building Code of Australia. Appropriate firefighting equipment will be installed (portable fire extinguishers/fixed fire hose reels/fire hydrant systems and water tanks). Implementation will be subject to detailed specialist consultant design. Emergency evacuation and emergency assembly points will be established throughout the site as required.



Legend

- Amended Development Corridor – TWA Facility
- Amended Development Corridor – Wind Farm
- Amended Site Boundary
- No Go Area
- 2km buffer around TWA Facility
- Property Boundary
- Drainage Line
- Site Access Point

TWA Conceptual Layout

- Proposed Accommodation Module
- Proposed Facilities (e.g Kitchen, Dining, Recreation)
- Proposed Parking Space
- Proposed Roads and Paths
- Proposed Sewer and Waste Treatment Plant

Dwelling Location

- Non-associated Dwelling
- Associated Dwelling

FIGURE 3.1

Temporary Workforce Accommodation (TWA) Facility Site

Image Source: ESRI Basemap (2022) Data source: NSW DSFI (2022)

3.2.2 Construction of TWA Facility

The TWA Facility buildings would be modular-style that, fabricated off-site and transported to the TWA site for installation. The modules may either arrive complete or as a system of modules that can be connected together to increase internal floor area as required. The construction phase of the TWA Facility requires all building foundations and in-ground service connect points for sewer, water, power and communications to be constructed and in place when the modular buildings are transported to site and installed.

A high-level overview of the construction sequence of the TWA Facility is as follows:

- Establishment of temporary road access.
- Earthworks, service trenches and foundations for the TWA Facility.
- Connection to temporary service plant.
- Site bulk earthworks.
- Installation of water and sewerage treatment plants.
- Installation of buildings and key components of the TWA Facility (e.g. accommodation modules, service and administration modules, and amenity facilities).
- Install first stage roads, hardstand, car parking, pathways, street lighting and landscaping.

All TWA Facility buildings would be designed to meet relevant building code requirements, to address accessibility and fire rating standards.

3.2.3 Operation

During operation of TWA Facility, a range of general activities would be undertaken to support the functions of the facility, such as general grounds maintenance, deliveries and waste removal, and worker movements. The operation and management of the TWA Facility will either be undertaken by Tilt Renewables' construction contractors or will be outsourced to a third-party that specialises in managing such a facility. Specialist activities in relation to the ongoing operation of the TWA Facility, including but not limited to food delivery, handling and service, housekeeping and laundry services provide opportunities for local and regional engagement of existing suppliers that are capable of providing these services.

For safety and ease of movement, all areas of the TWA Facility will require artificial lighting. The main road, internal circulation roads and all car parking must be provided with lighting designed to the relevant Australian Standards and in accordance with the Dark Sky Planning Guideline (DPE, 2023). Pathway lighting may be a mixture of overhead streetlights and low-level bollards. The selection of light type will be designed to avoid excessive light spillage onto the accommodation rooms and surrounding areas. Space between and around the accommodation units will be appropriately illuminated to avoid attracting insects and wildlife.

The management of the TWA Facility will consider the safety of residents as a key consideration. As an extension of the workplace, codes of conduct and acceptable behaviour must be strictly adhered to. Any consumption of alcohol will be controlled, and should alcohol be available at the facility, responsible service of alcohol requirements will apply within designated social areas with set operating times to ensure the wellbeing of employees is appropriately managed.

The use of shuttle buses to transport workers between construction compounds and the TWA Facility to help minimise potential traffic impacts on the local roads will be considered during the detailed design phase of the Project. The large proportion of traffic movements between the TWA Facility and construction compounds would typically occur at the start and end of the working day with peak AM traffic movements expected to occur around 7 am, while peak PM traffic movements would occur around 6 pm.

The TWA Facility will be accessed by personnel and construction vehicles via the proposed site access point (SAP) along Vinegaroy Road (SAP ID# 113/114). This site access point will be established with consideration of Austroads design requirements as well as the existing traffic volumes and the anticipated number of heavy and light vehicles required to operate the TWA Facility. Traffic movements associated with the TWA Facility have been assessed in the Addendum Traffic Impact Assessment prepared by Constructive Solutions Pty Ltd (refer to **Appendix A5**).

3.2.4 Decommissioning and Rehabilitation

The TWA Facility would be demobilised following the completion of construction of the Project. Due to the modular, transportable nature of the built form, most buildings can be either removed or disassembled and sold on or moved to another project/location.

The rehabilitation criteria and final landform requirements would be subject to both requirements of the landowner agreement for the TWA Facility and rehabilitation requirements of temporary infrastructure in the Development Consent for the Project. At a minimum, the TWA site will be rehabilitated to a safe, stable and non-polluting landform that restores the land capability of the previous land use prior to the establishment of the TWA Facility.

There may be an opportunity to leave infrastructure (on-site or in/around nearby communities) that is important to the landholder and the local community in place once construction has ceased and the construction workforce has demobilised. This could include groundwater bores (for firefighting purposes for instance), potential water / sewerage treatment facilities, housing or community infrastructure.

It is not proposed as part of this Amendment to repurpose or convert the TWA Facility to a permanent facility or allow it to be used for a different use following the completion of construction of the Project. Should this be considered in the future, an agreed alternative use would need to be negotiated and approved by DPHI and the landowner.

3.2.5 Services and Utilities

The TWA site will be serviced by electricity and telecommunications infrastructure. It is anticipated that upgrades will be required to the existing electricity distribution network that currently exists at the TWA site. Tilt Renewables is consulting with Essential Energy to determine the extent of upgrades required to service the TWA Facility. Additional electricity backup generators might also be considered. Telecommunications will also be available through mobile network connection.

The preferred water supply method is to tap into an existing potable water supply. Other options include rainwater harvesting, wastewater recycling, bore water supplies, and trucking water to site (least preferred). Tilt Renewables is currently investigating groundwater resources at the proposed TWA Facility to firm up groundwater yield and quality, which is the preferred water source in the absence of an existing piped potable water supply to the site. Groundwater is generally in plentiful supply in the local area, and preliminary pump testing indicates there is a good likelihood that a sustainable groundwater resource will be available to supply the TWA Facility.

A Waste Management Plan will be developed for management of waste and where possible any waste will be collected and recycled through existing recycling centres in the local community. General waste would be managed on-site via waste collection and recycling facilities, and then transported to a licenced landfill facility by an appropriately licenced contractor. Wastewater would be collected on site and either treated on-site or removed for treatment at a licenced wastewater treatment facility. Confirmation of wastewater management will be subject to detailed design.

Utility estimates associated with the TWA Facility are provided in **Table 3.2**; volumes provided are estimates only and subject to detailed design. Preliminary design indicates there is sufficient space within the Development Corridor – TWA to accommodate onsite water and wastewater treatment facilities at maximum capacity.

Table 3.2 Utility Estimates

Aspect	Detail	Volume (estimate only)
Water	Construction (dust suppression and vehicle/equipment washdown)	Up to 2,000 L/day
	Operation	125 L/person/day 75 kL/day – TWA Facility at max capacity (approximately 600 people)
Waste	Construction hard waste (construction waste will be minimised via the use of modular manufactured buildings transported to the site)	5 m^3 per week
	Operations hard waste	General waste one 1,100 L bin per week Paper/cardboard two 1,100 L bins per week Plastic and glass two 1,100 L bins per week Green waste one 1,100 L bin per week.
	Excavated soil (all to be reused on site)	0
Sewerage	The maximum wastewater load, including sewage, for a 600-room facility	75 kL/day

Utility usage for decommissioning would be detailed in the TWA Facility decommissioning plan and would be dependent on what is retained on site. Utility estimates during decommissioning are expected to be generally consistent with the construction phase.

3.2.5.1 Licences and Permits

Details regarding licences and permits required for services and utilities associated with the construction and operation of the TWA Facility will be confirmed in detailed design and outlined in the relevant Environmental Management Plans (EMPs).

Tilt Renewables would obtain a Water Access Licence (WAL) from WaterNSW to extract water for specific supply to the proposed TWA Facility. It is expected this would be a licence to transfer water rather than a new WAL and include a Zero Share Transfer from within the same groundwater source area (Sydney Basin Murray Darling Basin Groundwater Source Area). At present there is more than 10,000 ML available for trading within the Sydney Basin Murray Darling Basin Groundwater Source Area and Tilt Renewables are currently consulting with several WAL holders to secure a Zero Share Transfer.

Tilt Renewables will initiate the application for the WAL and seek a Works Approval to establish a commercial bore from WaterNSW. The groundwater bore would be drilled by a contractor who holds a current driller's licence issued by WaterNSW.

As there will be no wastewater discharge from the TWA Facility site, an Environment Protection Licence (EPL) for discharge would not be required.

3.2.6 Workforce

The TWA Facility will require a construction workforce of approximately 36, and an operational workforce of approximately 40 who would be responsible for the day-to-day operations, maintenance and upkeep of the TWA Facility. A portion of the workforce required to operate and maintain the TWA Facility may reside at the TWA Facility depending on where that workforce normally resides.

3.2.7 Timing of Proposed Amendment

Construction and use of the TWA Facility is proposed to align with the overall construction program of the Project, which has an estimated construction timeframe of approximately 4 years. Construction of the TWA Facility would commence at the start of the construction phase parallel with the commencement of public road upgrades for the broader LRWF project. Construction of the TWA Facility is not planned to be staged. The TWA Facility will be progressively built out in a sequenced manner that mirrors the ramp-up of the workforce required for the construction of the public road upgrades/repairs and on-site wind farm and ancillary infrastructure associated with the Project, which will assist in minimising additional pressure on other accommodation in the region. The construction workforce is expected to peak approximately two years into the construction phase, however the timing of this would be dependent on detailed design, program scheduling and the progress of construction activities.

The TWA Facility is estimated to have a capacity of approximately 600 rooms which would accommodate the estimated peak workforce together with the staff required to operate the TWA Facility. The final accommodation requirements of the TWA Facility will be subject to detailed design.

3.2.8 Environmental Management

Environmental Management Plans (EMPs) will be prepared for the TWA Facility to provide the strategic framework for the specific environmental management of all components of the proposed Amendment. The EMPs would:

- Incorporate a Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP), including all required sub-plans, protocols, management and mitigation measures proposed in this Amendment Report.
- Identify all relevant statutory approvals.
- Establish roles, responsibilities, authority and accountability of all key personnel involved in the environmental management of the TWA Facility.
- Establish procedures for consulting with the local community and relevant stakeholders about the operation and environmental performance of the TWA Facility.
- Establish procedures for handling of complaints, disputes, non-compliances and emergency response.

4.0 Statutory Context

4.1 NSW

This Amendment Report has been prepared in accordance with clause 113 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) which states that an application may, with the approval of the Planning Secretary, be amended at any time before the application is determined. DPE[2] has been advised of Tilt Renewables' intention to amend the Mod-1 Application to include the TWA Facility, with this Amendment Report describing the proposed Amendment and assessment of the associated environmental impacts. The proposed Amendment does not change the statutory approval pathway for the Project, as outlined in the Mod-1 Amendment Report.

4.1.1 Permissibility

The proposed Amendment does not affect the permissibility of the Project.

Clause 2.36(1)(b) of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Infrastructure SEPP) states that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The TWA Facility is temporary and ancillary to the Project, and therefore forms part of the proposed 'electricity generating works'. Where any other zone may prohibit the development Clause 4.38(3) of the Environmental Planning & Assessment (EP&A) Act states that development consent may be granted for State Significant Development despite the development being partly prohibited by an environmental planning instrument.

4.2 Commonwealth

A referral (EPBC 2014/7136) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was initially made for the Project in February 2014. The Project was determined to be a controlled action requiring assessment and approval under the EPBC Act in March 2014. The relevant controlling provisions included listed threatened species and communities (Sections 18 and 18A) of the EPBC Act.

The Project was granted Commonwealth approval under the EPBC Act, subject to conditions, on 29 June 2018. The approval was granted to Epuron Pty Ltd who were the original developers of the Project (Action). On 2 May 2019 the approval was transferred to Liverpool Range Wind Farm Pty Ltd (a subsidiary of Tilt Renewables).

[2] Note that following the recent Machinery of Government changes as of 1 January 2024 the Planning department of the former DPE is now within Department of Planning, Housing and Infrastructure (DPHI).

Following discussions with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) in 2020 and 2021, a re-referral (EPBC 2022/09416) of the Project (Action) was lodged with DCCEEW in November 2022 to enable the changes proposed to the Approved Project as part of the Mod-1 Application to be assessed under the EPBC Act (Mod-1 Referral). On 30 March 2023 the re-referral was determined to be a controlled action with the relevant controlling provisions being listed threatened species and communities and listed migratory species. A Public Environment Report is currently being drafted which will reflect the further changes now proposed as part of the RTS Project as well as this Amendment (Amendment 2) to include the proposed TWA facility, to be assessed and determined under the EPBC Act.

5.0 Engagement

5.1 Engagement During Progression of Amendment

This section outlines community and stakeholder engagement carried out during the preparation of this Amendment Report.

5.1.1 Government Agency Consultation

Tilt Renewables met with representatives of Warrumbungle Shire Council (WSC) and the Upper Hunter Shire Council (UHSC) in relation to the development of the TWA Facility.

As discussed in **Section 2.4.2**, Tilt Renewables investigated multiple potential TWA sites within the vicinity of the Coolah and Cassilis townships. As part of this process both WSC and UHSC were consulted. Both councils provided input on site suitability (particularly in relation to zoning provision and land use planning) and assisted with shortlisting the Coolah and Cassilis sites that were subject to detailed analysis and consultation with the community.

Warrumbungle Shire Council (WSC)

3/4/2023 – Tilt Renewables met with WSC in relation to site selection. No specific issues were raised in relation to the development of a temporary workforce accommodation facility however WSC were particularly interested in what legacy infrastructure may be left for the community and requested to have the temporary workforce accommodation facility located within Coolah township.

As discussed in **Section 3.2.4**, there may be an opportunity to leave infrastructure (on-site or in/around nearby communities) that is important to the landholder and the local community once construction has ceased and the construction workforce has demobilised. Potential legacy infrastructure could include groundwater bores (for firefighting purposes for instance), water / sewerage treatment facilities, housing or community infrastructure. It is not currently proposed as part of this Amendment to repurpose or convert the TWA Facility to a permanent facility or allow it to be used for a different use following the completion of construction of the LRWF Project. This can be revisited during planning for decommissioning in consultation with the WSC however would be subject to agreement with the landowner and separate approval.

13/10/23 – Tilt Renewables met with WSC and provided an update on the proposed TWA Facility and discuss the proposed community consultation program and associated timing - refer to **Table 5.1** for further information on the community consultation program.

14/11/23 – At WSC's request Tilt Renewables provided an overview of the feedback received during the community consultation. WSC were particularly interested in the split (for and against) each site and where those community members resided.

Upper Hunter Shire Council (UHSC)

20/10/2023 – Tilt Renewables met with UHSC representatives to provide updates on the Project and discuss the purpose and timing of the community consultation related to the TWA Facility.

Tilt Renewables also sent fact sheets directly to all councillors in WSC and UHSC on their publicly available listed email on the council websites.

Tilt Renewables are committed to the development and/or implementation of several plans and strategies including the development of a Community Engagement Plan, an Accommodation and Employment Framework, and a Community Benefit Sharing Plan. The implementation of such strategies will assist in reducing any adverse social impacts that may occur because of the TWA Facility and, where relevant, will include further consultation with and input from Council, further detail is provided in **Section 6.8**.

5.1.2 Community Consultation

Community consultation and engagement has been undertaken by Tilt Renewables to gather feedback from near neighbours, the broader community and key stakeholders in relation to the proposed TWA Facility. Most of this engagement was delivered through in-person meetings with neighbouring landholders, key stakeholder meetings and through three drop-in community sessions held over three days between 24 and 26 October 2023 in the local townships of Cassilis (Cassilis Bowling Club) and Coolah (Project shopfront, located at 50 Binnia Street, Coolah).

Key stakeholder groups consulted included:

- Proximal landholders (neighbours).
- Community residents from the social locality.
- Registered Aboriginal Parties (as part of the ACHA).

The engagement conducted at this time specifically covered details regarding the TWA Facility and the temporary project-specific quarry (subject to separate approval process). While stakeholders could provide feedback or ask questions about the broader Project, this was not the focus of the consultation.

The consultation activities are summarised in **Table 5.1**. They were chosen to ensure those most impacted had the greatest opportunity to be involved through one-on-one engagement while also ensuring the broader community was informed of the TWA Facility and could attend a drop-in session or provide online feedback via the dedicated survey if desired.

Table 5.1 Engagement Summary

Mechanism	Description	Target Stakeholders	Timing / Responsibility	No. Consulted
Preliminary engagement (20 potential sites)	Tilt Renewables undertook engagement with landholders of potential TWA Facility locations to investigate appropriateness against key site selection criteria.	Local landholders in and around Coolah and Cassilis	Between January–August 2023 Tilt Renewables	20
Proximal landholder meetings (neighbours)	Tilt Renewables undertook a series of direct neighbour engagement ahead of the community drop-in sessions.	Neighbouring residents	25 September–20 October 2023 Tilt Renewables	25
Community Consultative Committee (CCC) meeting	Project update and briefing on upcoming TWA Facility locations and consultation activities.	Liverpool Range Wind Farm CCC	5 October 2023 Tilt Renewables	10 Meeting minutes on Project website
Community drop-in sessions	Series of three community drop-in sessions were conducted by Tilt Renewables to engage with and solicit feedback from the broader community. Two sessions were held in Coolah, with a third in Cassilis. These sessions were publicised on Tilt Renewables' Project website, in local newspaper advertorials, via emails and the Project newsletter (refer below for further details).	Neighbouring residents	24–26 October 2023 Tilt Renewables	Community Information Session 1, Coolah: 18 Community Information Session 2, Coolah: 13 Community Information Session 3, Cassilis: 46
Community Survey	Paper feedback surveys for both the TWA Facility sites were provided during the community drop-in sessions. A link to the online feedback survey, hosted by Umwelt, was also circulated and available via the Project website and QR codes for participants to complete either then or at a later date.	Broader Community Community Groups	January 2021– Ongoing Tilt Renewables Umwelt	93
Email	Emails containing Project Newsletters, consultation promotions, and Project Updates.	Liverpool Range Wind Farm project stakeholder database	13 October – newsletter + consultation promotion 31 October – reminder email 15 November – Cassilis TWA Facility removal update	Mailing list of approximately 800

Mechanism	Description	Target Stakeholders	Timing / Responsibility	No. Consulted
Project Website	Multiple updates were made to the Project website in the lead up, during and post consultation. Information online included: • neighbour consultation fact sheets • community consultation fact sheets • photomontages • feedback form.	Broader Community	Ongoing – updated regularly Tilt Renewables	Unknown
Media and Communications	Advertisements of the Community Information Sessions in the Coolah Diary and Dunedoo Diary, on Coolah and Cassilis community Facebook pages such as the Cassilis Community Page and Community Notice Board – Coolah & Surrounds.	Broader community	Initial notification (soft announcement): 27 September – Coolah Diary 28 September – Daily Liberal 29 September – Mudgee Guardian Detailed ads: 11 October – Coolah Diary 18 October – Dunedoo Diary 20 October – Mudgee Guardian 21 October – Daily Liberal	Coolah and Dunedoo District Diaries: reach approx. 7,000 people Cassilis Community page: approx. 1,800 members (public) Community Notice Board – Coolah & Surrounds page: approx. 3,100 members (private)
Project Newsletter	Project Newsletter with key Project updates and invitation of upcoming community drop-in sessions placed on local notice boards, in Coolah Diary, delivered by post to UHSC, WSC and Mid-western Regional Council (MWRC) offices and emailed to full stakeholder database.	Cassilis and Coolah communities	Coolah Diary – 11 October	Mailing list of approximately 800

Note: Following community consultation, Tilt Renewables updated the Project website and then issued a notice via email to the Project's stakeholder database, as well as targeted emails and calls to some stakeholder groups, individuals and both councils, advising them that the Project will not be pursuing the Cassilis site following analysis of the survey and consultation feedback.

5.2 Key Issues

Outcomes from community consultation activities (undertaken by Tilt Renewables) have been reviewed and consolidated to understand the range of community views, concerns, interests, and feedback provided with regards to the TWA Facility.

In accordance with the DPE EIS Guideline, community views on the Project have been considered in the following categories:

- the strategic context, including identifying the key natural and built features that are valued in the area and could be affected by the Project
- the design of the Project and any alternatives considered
- any relevant statutory issues
- community engagement (e.g. the level or quality of engagement carried out during the preparation of the EIS, the community engagement that should be carried out if the Project is approved)
- the economic, environmental and social impacts of the Project
- the justification and evaluation of the Project as a whole (e.g. consistency of project with Government plans, policies or guidelines; merits of the Project)
- issues that are either beyond the scope of the Project (e.g. broader policy issues) or not relevant to the Project.

As discussed in **Section 2.4.2**, the community were consulted regarding two potential TWA Facility sites, the proposed TWA Facility site – 3 km east of Coolah Township and the other site in the vicinity of the Cassilis township. A total of 93 surveys were completed in relation to the TWA Facility. Respondents were given the option of providing feedback on the Coolah TWA Facility site, the Cassilis TWA Facility site, or both. Most responses (65) were completed by respondents who only chose to provide feedback on the Cassilis site while 28 were completed by respondents who either provided feedback on both TWA Facility sites or just the Coolah TWA Facility site.

The key categories in community views centre around the economic, environmental and social impacts/benefits of the proposed TWA Facility. Stakeholders were most concerned about:

- Impact to amenity associated with traffic movements.
- Impact to services particularly health care.
- Potential social impacts associated with anti-social behaviour.

Perceived positive impacts associated with the proposed TWA Facility included:

- Economic benefits associated with local employment and procurement opportunities.

Further detail regarding the community consultation and feedback received from the community is provided in the Social Assessment (**Appendix M**).

5.3 Future Engagement

Ongoing community engagement relating to the Project, including the TWA Facility will be guided by the following industry and government standards and frameworks:

- NSW Government's Undertaking Engagement Guidelines for State Significant Projects (DPE, 2022b).
- The International Association for Public Participation (IAP2)'s Spectrum of Public Participation (2018).

Tilt Renewables will continue consultation through the assessment phase of the Mod-1 Application primarily through updates via the Project website, with regular Project newsletter updates, email notices, CCC meetings, maintenance of an Accommodation Register and Goods & Services Register, and the availability to talk to Project staff and host meetings at the Project Shopfront in Coolah. Tilt Renewables will continue to implement the Community Engagement Plan to manage engagement and information sharing surrounding the Project and the TWA Facility. This strategy will assist in guiding future community engagement and social investment activities.

6.0 Overview of Assessment of Impacts

6.1 Assessment Approach

This section provides a summary of the assessment approach for the proposed ancillary development and comparison against the Approved Project. Where additional assessment has been undertaken to assess the potential construction and operational impacts associated with the proposed ancillary development, references to the relevant summary section and the specialist report (where relevant) is included. Where required, additional or revised mitigation measures are also proposed. A consolidated summary of all proposed commitments identified in the RTS Project Amendment Report, and any changes made through this Amendment Report, is presented in **Appendix C**. A summary of the proposed management and mitigation measures applicable to the TWA facility is presented in **Appendix N**.

This section has been prepared having regard to the relevant guidance in the DPE State Significant Development Guidelines – Preparing an Environmental Impact Statement and State Significant Development Guidelines – Preparing an Amendment Report. The approach to the assessment of the TWA Facility is summarised in **Table 6.1** with further detail provided in the relevant sections below.

Table 6.1 Assessment Approach

Aspect	Assessment Approach	Reference
Noise	Noise generated from construction activities and construction related traffic has the potential to impact the amenity of neighbouring properties. A noise impact assessment has been prepared for the proposed TWA Facility. The assessment indicates that relevant construction and traffic noise criteria can be achieved through the implementation of noise management and mitigation measures. Traffic and operational noise criteria are achieved for all Non-Associated residences.	**Section 6.2 and Appendix G**
Traffic and Transport	Traffic movements associated with the construction workforce were assessed as part of the Approved Project, however the proposed TWA Facility changes the assumptions made in the assessment based on number of movements and transport routes utilised, particularly the number and type of turning movements and the required turn treatments at relevant intersections along Vinegaroy Road. A Traffic Impact Assessment (TIA) for the TWA Facility has been prepared by Constructive Solutions Pty Ltd to assess the traffic and transport impacts associated with the TWA Facility. The TIA indicates the proposed TWA Facility will result in comparable traffic and transport impacts relative to the approved Project. Potential traffic and transport impacts can be appropriately managed and mitigated through appropriate intersection design and compliance with the Traffic Management Plan (TMP) as required under the existing Development Consent.	**Section 6.3 and Appendix H**

Aspect	Assessment Approach	Reference

Biodiversity	The TWA Facility site is extensively cleared due to agricultural land use and meets the definition of Category 1 – Exempt Land. Ground disturbance associated with the construction of the TWA Facility will not result in adverse impacts to native flora and fauna. The requirements for a Biodiversity Development Assessment Report (BDAR) should be waived. Umwelt have prepared a BDAR Waiver Request to support this approach.
	The BDAR Waiver Request is based on the following:
	• The TWA Facility will not clear native vegetation:
	  ○ The TWA Facility site is an extensively cleared rural block where intensive agricultural practises are the primary land use. Due to it being subject to these ongoing land management practices, the TWA Facility site does not support native vegetation, derived or otherwise. It entirely supports exotic vegetation in the form of current crop.
	  ○ The vegetation within the TWA Facility site is considered to meet the definition of Category 1 – Exempt Land mapping.
	The proposed Amendment is not expected to have any additional adverse impacts on threatened species or ecological communities relative to the approved Project.
		Section 6.4 and Appendix I

Heritage	The additional disturbance area associated with the TWA Facility has the potential to increase impacts to Aboriginal cultural heritage and non-Aboriginal heritage relative to the approved Project. An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared for the proposed TWA Facility by Umwelt, in consultation with the Registered Aboriginal Parties. Two isolated Aboriginal objects were identified in the TWA Facility site during visual inspection. No scarring or other cultural modification of native trees was observed in the TWA Facility site. No further Aboriginal cultural heritage objects or sites were identified as part of the survey and there is low potential for unknown sites to be present within the TWA Facility site. The ACHA indicates the proposed TWA Facility will result in minor additional impacts to known Aboriginal objects when compared to the impacts identified in the ACHA prepared by Umwelt in support of the RTS phase of the Project. It is also unlikely that additional measurable impacts will occur to any unknown Aboriginal objects as the TWA Facility site is considered to have low archaeological potential. The management measures presented in the RTS ACHA (Umwelt, 2022) prepared in support of the Mod 1 Application remain relevant for the TWA Facility site, with the exception of the isolated objects identified, which would be subject to surface collection and potential repatriation in accordance with the future Aboriginal Cultural Heritage Management Plan (ACHMP) There are no listed heritage sites within the TWA Facility site or within the vicinity of the site therefore no additional impact to Non-Aboriginal Heritage is predicted relative to the approved Project.	**Section 6.5 and Appendix J**

Aspect	Assessment Approach	Reference
Visual	A Visual Impact Assessment (VIA) has been prepared by Moir Landscape Architects. Based on the detailed assessment, a combination of distance, vegetation and topography will assist in screening the proposed TWA Facility from the majority of public and private vantage points. The VIA indicates the impact to the broader visual character will be low.	**Section 6.6 and Appendix K**
Hazard - Bushfire Threat	With the exception of bushfire threat the proposed TWA Facility will not result in any significant changes to the hazards and risks associated with the approved Project. Given the proposed TWA Facility represents temporary residential development additional assessment relating to bushfire threat and associated management is required. Accordingly, a Bushfire Threat Assessment (BTA) has been prepared in accordance with Planning for Bushfire Protection (PBP, 2019), (Rural Fire Service (RFS) 2019) to assess potential hazards associated with bushfire and potential risks associated with the use of the site for accommodation. The BTA includes mitigation measures that aim to reduce the bushfire risk applicable to the development.	**Section 6.7 and Appendix L**
Social	The TWA Facility is proposed to address the potential impact of the Project on services (particularly accommodation). While there are obvious benefits to the Project including reducing the impact on services and bringing associated economic benefits the potential impact of the rapid increase in population within the Coolah locality and associated social impact requires assessment. A Social Assessment has been prepared to support the TWA Facility, this includes detailed assessment of the feedback received during consultation and the development of mitigation and management measures to address the potential social impacts of the TWA Facility.	**Section 6.8 and Appendix M**
Water and Soil Resources	Detailed design of the TWA Facility will include the development and implementation of appropriate erosion and sediment controls in accordance with the relevant guidelines and the conditions of consent relevant to the Project. A fourth order tributary runs along the northern boundary of the site and a second order tributary runs through the centre (refer to **Figure 2.3**). Both drainage lines are east-west running tributaries of the Coolaburragundy River, a perennial sixth order water course located 2.2 km to the west of this portion of the TWA Facility site. The majority of the TWA Facility site is not subject to the mapped 1% Annual Exceedance Probability (AEP) flood zones determined through flood modelling undertaken for the Project. The TWA Facility will be appropriately designed and sited to address relevant flooding risks.	No further assessment required
Air Quality	Similar to the approved project, construction of the TWA Facility has the potential to result in air emissions associated with disturbance of the site and vehicle movements. Potential air quality impacts associated with construction will be managed through the implementation of construction management and mitigation measures as part of the EMP in accordance with the proposed management and mitigation measures applied to the Project and the relevant conditions of consent.	No further assessment required

Aspect	Assessment Approach	Reference
Waste	A Waste Management Plan will be developed for management of waste and where possible any waste will be collected and recycled through existing recycling centres in the local community. General waste would be managed on-site via waste collection and recycling facilities, and then transported to a licenced landfill facility by an appropriately licenced contractor. Wastewater would be collected on site and either treated on-site or removed for treatment at a licenced wastewater treatment facility. Confirmation of wastewater management will be subject to detailed design.	No further assessment required
Land use conflict	A land use risk identification and ranking process has been undertaken in accordance with the DPI Land Use Conflict Risk Assessment (LUCRA) Guide (2011). The LUCRA assessment process, utilises a 'probability and consequence' risk assessment matrix to estimate the potential for land use conflicts. The assessment identifies a range of potential land use conflicts and the relevant management strategies (mitigation measures) rank the mitigated risk rating of the potential land use incompatibilities identified associated with the TWA Facility. The objective is to identify and define controls that lower the risk ranking score to 10 or below. All mitigation measures proposed by Tilt Renewables have resulted in the reduction of risk rating to below 10 for all identified potential land use conflicts.	**Section 1.9**
Economic	The TWA Facility is considered ancillary development to the Project and will reduce the broader impact of the Project and improve the efficiency of construction. The TWA Facility, located centrally to the Project, is likely to result in a number of economic benefits for local communities and electricity consumers more broadly. The economic benefits of the TWA Facility are summarised as follows: • Reduced daily travel distances and commute times for Project workforce which potentially leads to improved road safety outcomes. • Increased potential to consider buses for transporting a portion of the Project workforce between the TWA Facility and construction compounds located within the Project Site Boundary. • Increased potential business opportunities for local suppliers of machinery/equipment hire and repair, fencing, landscaping, and labour including food preparation and cleaning. • Flow-on economic benefits to local business from workers residing locally and spending money in the local communities.	No further assessment required

6.2 Noise

A Noise Assessment prepared for the TWA Facility was undertaken by Sonus Pty Ltd (Sonus), the results of the NIA are provided in the following section with the full report provided as **Appendix G.**

The methodology applied to the NIA is outlined in **Appendix G**. The NIA considers noise from the construction, operation and decommissioning of the TWA Facility as well as noise from traffic on public roads generated by the TWA Facility during the construction phase of the Project. Noise associated with the TWA Facility has been assessed in accordance with the NSW Interim Construction Noise Guidelines (ICNG), as per Condition 6(b) of Schedule 3 Environmental Conditions.

6.2.1 Impact Assessment

Table 6.2 identifies the noise criteria for the construction, operation, and decommissioning of the TWA Facility from the ICNG as per the Conditions.

Table 6.2 Noise Management Levels (NMLs)

Land Use	Time of day		RBL	Noise Management Level
Residential	Recommended Standard Hours	Monday to Friday 7 am – 6 pm Saturday 8 am–1 pm	35 dB(A)	45 dB(A)
	Outside Recommended Standard Hours	Saturday (7 am–8 am or 1 pm–6 pm) Sunday or Public Holidays	35 dB(A)	40 dB(A)
		Evening (6 pm–10 pm)	30 dB(A)	35 dB(A)
		Night (10 pm–7 am)	30 dB(A)	35 dB(A)

6.2.1.1 Construction Noise

The ICNG outlines several activities that highlight where noise created can become an annoyance (refer to **Appendix G** for activities as 'particularly annoying'). If any of these activities are present, 5 dB(A) must be added to the predicted noise levels in consideration of the greater annoyance that may be caused. In accordance with the ICNG, 5 dB has been added to the predicted noise levels based on the use of reversing alarms and vibratory rollers.

Below are the predictions from NIA for construction noise:

- Between the hours of 7 am and 6 pm Monday through to Friday, and 8 am to 1 pm Saturday, the construction noise predictions for Noise Management Level are 45 dB(A) and for the hours of Saturday (7 am to 8 am or 1 pm to 6 pm), Sunday or Public Holidays the construction noise predictions for Noise Management Level are 40 dB(A).
- The construction noise predictions for the highest associated residence (C6-1) between the hours of 7 am and 6 pm Monday through to Friday, and 8 am to 1 pm Saturday are 64 dB(A), as well as for the hours of Saturday (7 am to 8 am or 1 pm to 6 pm), Sunday or Public Holidays.
- The construction noise predictions for the highest non- associated residence (B6-11) between the hours of 7 am and 6 pm Monday through to Friday, and 8 am to 1 pm Saturday are predicted to be 47 dB(A), as well as for the hours of Saturday (7 am to 8 am or 1 pm to 6 pm), Sunday or Public Holidays.

As a result, a construction noise exceedance at the associated residence C6-1 was found, and seven non-associated residences in accordance with the ICNG noise management levels outlined in **Table 6.2.** As a result of exceedances, management and mitigation measures for construction noise are outlined in **Section 6.2.2**.

6.2.1.2 Operational Noise

Many of the noise sources associated with the TWA Facility have the capacity to operate 24 hours per day, including generator sets, exhaust fans and air conditioning plant. Furthermore, it is likely that vehicle movements associated with workers travelling to or from work sites could occur during the 'night' and 'evening' periods (before 7 am or after 6 pm) during which more stringent NMLs are provided by the ICNG. As such, this assessment has been based on the night and evening NMLs. In the case of the TWA Facility, the reversing of 'mine spec' vehicles fitted with reversing alarms is the only activity that might attract a characteristic penalty under ICNG. Due to the being a mandatory activity, a 5 dB(A) penalty for this activity has been applied during 'evening' periods.

Assumptions used to predict noise levels for the TWA Facility are provided in **Appendix G**.

The predicted noise levels for the TWA Facility are presented below, whilst predicted noise level contours for each site during the 'night' and evening periods can be found in **Appendix G**.

Night Results:

Based on the assessment, the night-time NML is exceeded at one location, C6-1, which is an Associated Residence, where a level of 44 dB(A) is predicted. As this is an Associated Residence mitigation measures will not be required.

Evening Results:

When considering a characteristic penalty for reversing alarms fitted to 'mine spec' vehicles, the evening NML is also exceeded at the associated residence C6-1 with a predicted level of 49 dB(A). Due to this being an Associated Residence, mitigation measures are not required.

Sleep Disturbance:

No associated or non- associated receivers are predicted to experience noise greater than L_{max}50 dB(A) external screening noise level for sleep disturbance (the L_{max} screening level assumes that the minimum RBL of 35 dB(A) applies at all locations.

6.2.1.3 Decommissioning Noise

Post the completion of construction of the Amended Project, the TWA Facility site will be rehabilitated in consultation with the landowner to determine appropriate, safe and stable landform(s) that can facilitate ongoing rural activities. Decommissioning noise is not considered to be louder than the noise associated with construction of the TWA Facility.

6.2.1.4 Traffic Noise

Condition 6(a) refers to the need to minimise traffic noise associated with construction. In accordance with the Road Noise Policy (RNP), the assessment criteria are defined by road categories, the type of the project or land use and the time of day under which noise is created. Majority of traffic associated with the TWA Facility would utilise Vinegaroy Road and is consequently considered a "sub arterial road" for the purposes of RNP. Thus, the following criteria highlighted in **Table 6.3** applies in accordance with the RNP.

Table 6.3 Road Traffic Noise Assessment Criteria for Residential Land Uses

Road Category	\Type of Project/ Land Use	Assessment Criteria	
		Day (7 am–10 pm)	Night (10 pm–7 am)
Freeway / arterial / sub- arterial roads	• Existing residences affected by noise from redevelopment of existing redevelopment of existing freeway/arterial/sub-arterial roads. • Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial road generated by land use developments.	$L_{Aeq, (15\ hour)}$ 60 (external)	$L_{Aeq,}$ (9 hour) 55 (external)

Road noise from traffic associated with the TWA Facility on Vinegaroy Road has been predicted based on the following assumptions:

- Up to 1,100 individual vehicle movements each day (comprising 550 departures from the TWA Facility during the morning peak, and 550 arrivals during the evening peak).
- The assumption that 50% of the morning peak would occur prior to 7 am.
- An open road speed limit along Vinegaroy Road (and other local roads) of 100 km/h.
- Negligible heavy vehicles.
- The nearest existing residence to Vinegaroy Road being 30 metres from the roadside.

At the nearest noise sensitive receivers, a day-time noise level of 48 dB(A) (Leq. 15 hour) and a night-time noise level of 45 dB(A) (Leq¸9 hour) is predicted from light vehicle traffic associated with the TWA Facility. As these noise levels are more than 10 dB(A) below the road noise assessment criteria for each time period, and assuming that the noise from existing traffic on Vinegaroy Road complies with the Policy, compliance with the Policy will be achieved with the additional of the TWA Facility traffic.

6.2.2 Management and Mitigation Measures

6.2.2.1 Construction

It is necessary to ensure that all feasible and reasonable work practices and mitigation measures are adopted to minimise any noise impacts from the work, such as:

- Screening equipment particularly in the southwest and northwest directions, to minimise noise emissions towards the affected receivers.
- Installing broadband or “white noise” reversing alarms (in lieu of tonal reversing alarms) on all site-based equipment.
- Arranging the site such that equipment can operate with a forward-in / forward-out movement to minimise the need for reversing to occur (and as such minimise the use of reversing alarms).
- Shutting down equipment when it is not in use to avoid periods of excessive idling.

6.2.2.2 Operations

All feasible and reasonable noise controls will likely be required to achieve the evening and night NMLs. The most significant noise sources contributing to the predicted levels are the cumulative emissions of the air conditioning units fitted to the accommodation units, vehicle movements along the TWA Facility access road, and the electrical generators.

Options to reduce noise levels associated with these noise sources may include the following:

Air Conditioners:

- Selecting low-noise air conditioning condenser units, and selecting units with a 'low noise' or 'night' mode.
- Installing air conditioning condenser units at locations where the off-site noise impact is likely to be minimised (for example, where line-of-sight to noise sensitive locations is shielded, or where reflections towards noise sensitive locations is avoided).
- Fitting accommodation unit air conditioners with timers to prevent them from being left running unattended.

Electrical Generators:

- Selecting generators with lower sound power levels.
- Fitting generator sets with proprietary noise attenuation kits, or 'hush kits'.
- Constructing barriers around the noise generators or installing the generators within dedicated acoustically designed enclosures.
- Fitting attenuators to air intakes and discharges.

Vehicle Movements:

- Seal the access road and car parking areas.
- Providing speed limit signposts along the access road to ensure drivers do not speed and create excess noise.
- Encourage carpooling or provide buses to the work sites to limit the amount of traffic on the access road.
- Fitting broadband reversing alarms to the mine spec vehicles.
- Constructing mounds alongside the access roadways to block line-of-sight to noise sensitive areas.

6.2.2.3 Decommissioning

Similar mitigation measures should be adopted to minimise any noise impacts from the work.

6.2.2.4 Traffic

No additional management and mitigation measures are proposed for the TWA Facility.

6.3 Traffic Impact Assessment

The Addendum Traffic Impact Assessment (Addendum TIA) for the TWA Facility was prepared by Constructive Solutions Pty Ltd to assess the traffic and transport impacts associated with the TWA Facility and is provided in **Appendix H**. It builds on the traffic and transport analysis contained within the Supplementary TIA that was prepared by Constructive Solutions Pty Ltd in support of the Response to Submissions (RTS) phase of the Mod-1 Application (Amendment 1).

The assessment and associated results are summarised in the following section.

6.3.1 Impact Assessment

6.3.1.1 Traffic Generation

The Supplementary TIA included all estimated worker Light Vehicle (LV) traffic movements however does not assume the inclusion of the proposed TWA Facility. The inclusion of the TWA Facility required changes to the assumed start and end locations of worker LV movements and their redistribution along the relevant public roads. It does not require any changes to the total vehicle movements calculated for the Project by the traffic generation model that was used to inform the Supplementary TIA.

The total wind farm vehicle movements and the Heavy Vehicle (HV) and Over-size / over-mass (OSOM) vehicle distributions are also not impacted and remain as per the traffic generation model included with the Supplementary TIA.

The traffic generation model has been updated to reflect the revised start and end locations of worker LV movements to account for the proposed TWA Facility. Details of the changes to the traffic generation model are discussed in more detail in **Appendix H**.

The LV pilot vehicle movements associated with OSOM movements are not impacted by the introduction of the proposed TWA Facility. These movements will continue to originate from the Golden Highway and will be programmed to be undertaken outside of peak vehicle movement hours.

The key activities undertaken and the key traffic and transport LV movement assumptions when considering the potential impacts of the TWA Facility are outlined in **Table 6.4**.

Table 6.4 Workforce LV Traffic Movement Assumptions

Intersection	Key Traffic Movement Assumptions
Golden Highway and Vinegaroy Road	Workforce LV traffic distribution is: • 85% of the daily traffic travels from the proposed TWA Facility to the Project site and will not utilise this intersection. • 5% of the daily traffic travels from Coolah along Vinegaroy Road to the Project site and will not utilise the intersection. • 5% of the daily traffic travels along the Golden Highway (West) and will turn left into Vinegaroy Road. Of this 5% distribution, 100% will travel during the AM peak hour. • 5% of the daily traffic travels along the Golden Highway (East) and will turn right in Vinegaroy Road. Of this 5% distribution, 100% will travel during the AM peak hour.

Intersection	Key Traffic Movement Assumptions
Vinegaroy Road and Rotherwood Road	Workforce LV traffic distribution is: • 10% of the daily traffic travels north from the Golden Highway along Vinegaroy Road and will turn right into Rotherwood Road. Of this 10% distribution, 100% will travel during the AM peak hour. • 90% of the daily traffic travels south from the proposed TWA Facility along Vinegaroy Road and will turn left into Rotherwood Road. Of this 90% distribution, 95% will travel during the AM peak hour.
Vinegaroy Road and Turee Vale Road	Workforce LV traffic distribution is: • 10% of the daily traffic travels north from the Golden Highway along Vinegaroy Road and will turn right into Turee Vale Road. Of this 10% distribution, 100% will travel during the AM peak hour. • 90% of the daily traffic travels south along Vinegaroy Road from the proposed TWA Facility and Coolah and will turn left into Turee Vale Road. Of this 90% distribution, 95% will travel during the AM peak hour.
Vinegaroy Road and combined D1-cluster SAP / TWA Facility Entrance (SAP ID# 113/114)	Workforce LV traffic distribution is: • 95% of the daily traffic travels north from the Project site along Vinegaroy Road and will turn right into the TWA Facility. Of this 95% distribution, 95% will travel during the PM peak hour. • 5% of the daily traffic travels south from the Project site along Vinegaroy Road and will turn left into the TWA Facility. Of this 5% distribution, 100% will travel during the PM peak hour.
Vinegaroy Road and Coolah Creek Road	Workforce LV traffic distribution is: • 95% of the daily traffic travels north along Vinegaroy Road from the Golden Highway and the TWA Facility and will turn right into Coolah Creek Road. Of this 95% distribution, 100% will travel during the AM peak hour. • 5% of the daily traffic travels south along Vinegaroy Road from Coolah and will turn left into Coolah Creek Road. Of this 5% distribution, 100% will travel during the AM peak hour.

The traffic analysis comparison summary incorporating the TWA Facility are provided in **Appendix H,** and a summary of the traffic volumes associated with the construction of the Project is summarised in **Table 6.5**.

Table 6.5 Construction Traffic Volumes (One-way Trips)

Total Vehicle Movements- One-way Trips	HV	OSOM	LW	Total
Total Estimated Traffic for the Project	102,938	2,253	109,443	214,634
Estimated traffic for Public Road Upgrade Works	27,183	0	8,550	35,733
Estimated traffic for Wind Farm Construction Works	75,756	2,253	100,893	178,901

6.3.2 Intersection Assessment

The introduction of the proposed TWA Facility required a change to the traffic generation model included in the Supplementary TIA due to the redistribution of worker LV movements specifically along Vinegaroy Road. The updated traffic generation model does not result in an increase in construction traffic, however there is a change in the origin of workforce LV movements.

Access to the proposed TWA Facility off Vinegaroy Road is proposed from the same site access point (SAP) D1 Turbine Cluster (SAP ID#113/114) as assessed in the Supplementary TIA. Intersection analyses along Vinegaroy Road have been updated based on the changes to workforce LV movements associated with the proposed TWA Facility. A comparison of required intersection treatments from the Supplementary TIA and the outcome from this Addendum TIA is presented in **Table 6.6**.

Table 6.6 Summary of Amendments to Intersections

Intersections	Supplementary TIA Turn Treatments	Addendum TIA Turn Treatments
Vinegaroy Road		
Golden Highway	CHR(S) / AUL(S) ([Note 1])	BAR / BAL
Rotherwood Road	CHR(S) / BAL ([Note 2])	BAR / BAL
Turee Vale Road	BAR / BAL	BAR / BAL
D1- cluster entrance / TWA Facility entrance (SAP ID#113/114)	BAR / BAL	BAR / BAL
Coolah Creek Road	BAR / BAL	BAR / BAL
Note 1: The outcome from the analysis included in the Supplementary TIA for this intersection indicated that BAR and BAL turn treatments are required however, from previous correspondence between TfNSW and Tilt Renewables, TfNSW have indicated that the minimum requirement would be a CHR(s) / AUL(S). **Note 2:** The outcome from the analysis included in the Supplementary TIA for this intersection indicated that BAR / BAL turn treatment are required however, from previous correspondence between Warrumbungle Shire Council (WSC) and Tilt Renewables, WSC have indicated that the minimum requirement would be a CHR(S) / BAL.		

6.3.3 Traffic Management and Mitigation Measures

Key conclusions of this Addendum TIA in relation to the TWA Facility include:

- **Estimated Project traffic volumes remain unchanged:** the introduction of the TWA Facility does not materially change the number of vehicles movements estimated for the Project however, some changes were required to the workforce LV trip-origins and movements that were assumed in the Supplementary TIA. This influences the number and type of turning movements and the required turn treatments at relevant intersections along Vinegaroy Road.
- **Optimised intersection design:** based on the current construction program and traffic estimates the intersection analysis determined that BAR / BAL intersection turn treatments are required at all intersection locations off Vinegaroy Road. Further intersection analysis and consultation with the relevant road authorities will be required once a Balance of Plant (BoP) contractor has been engaged and detailed construction scheduling has been refined further.

- **Other benefits:** The inclusion of the TWA Facility at the proposed location is expected to result in a number of benefits from a traffic and transport perspective, including:
    - **Uses an existing/planned SAP:** the TWA Facility utilises an existing driveway to the property and portion of access track where SAP ID#113/114 is proposed as part of Project to provide access to the D1-cluster of wind turbines. The proposed SAP was previously assessed and achieves minimum safe sight distances.
    - **Improved road safety**, and in particular driver fatigue, will be improved with shorter commutes for workers between the wind farm work fronts and the TWA Facility compared to travelling from home or other accommodation nearer to large regional centres like Dubbo and Tamworth and beyond.
    - **Reduced congestion** during peak times, by not having two-thirds of the construction workforce accessing the Project site via the Golden Highway/Vinegaroy Road intersection which exhibits significantly higher existing traffic volumes compared to the local roads.

The introduction of the TWA Facility is considered to be an improvement from a traffic and transport perspective. Potential traffic and transport impacts can be appropriately managed and mitigated through appropriate intersection design and compliance with Traffic Management Plan as required under the Development Consent for the Project.

No further additional management and mitigation measures are required as a result of the TWA Facility.

6.4 Biodiversity

A Biodiversity Development Assessment Report (BDAR) Waiver has been prepared for the TWA Facility and is provided in **Appendix I**.

6.4.1 Assessment of Impacts

In order to decide if the requirement for a BDAR can be waived, the TWA Facility should be considered unlikely to have any significant impact on biodiversity values if it:

- Will not clear or remove native vegetation other than:
    - A few single trees with no native understorey in an urban context.
    - Planted native vegetation that is not consistent with a Plant Community Type (PCT) known to occur in the SAME Interim Biogeographic Regionalisation of Australia (IBRA) subregion (e.g., street trees, trees in carparks, landscaping).
- Will have negligible adverse impacts on threatened species or ecological communities, considering habitat suitability, abundance and occurrence, habitat connectivity, movement and water sustainability including consideration of any non- natural features, non- native vegetation and human- built structures.
- Will have negligible adverse impacts ion protected animals because of impacts to flight path integrity.

The BDAR Waiver request has been prepared by accredited assessors under the BAM on behalf of Tilt Renewables, in accordance with the biodiversity development assessment report waiver determinations for SSD and SSI applications fact sheet prepared by the Department of Planning and Environment (DPE 2018).

6.4.2 BDAR Waiver Justification

The following is provided as justification for the BDAR Waiver, as well as a summary of how the TWA Facility is unlikely to have a significant impact on biodiversity values:

- BDAR Waiver – **Appendix I**.
- Land Category Mapping of the TWA Site (Umwelt 2023) – **Appendix I**.
- The proposed TWA Facility will not clear native vegetation:
    - The TWA Site occurs in a private property on the north side of Vinegaroy Road, approximately 3 km southeast of Coolah, NSW. It occurs on an extensively cleared rural block (Lot 160 DP 750744) where intensive agricultural practices are the primary land use. Due to it being subject to these ongoing land management practices, the TWA Site does not support native vegetation, derived or otherwise. It entirely supports exotic vegetation in the form of current crop.
    - The vegetation within the TWA Site is considered to meet the definition of Category 1- Exempt Land mapping. Confirmation of this land categorisation was made through a site inspection undertaken by Umwelt Senior Ecologist (Rhys Osborne) and Principal Ecologist (Allison Riley) on 23 August 2023. The mapping that confirms this assessment is provided in full in **Appendix I.**
- The TWA Facility is not expected to have adverse impacts on threatened species or ecological communities:
    - The TWA Site is Category 1 – Exempt Land that does not support suitable habitat values for threatened species.
    - The TWA Facility will not fragment connectivity or impact on nearby waterways.
    - No threatened flora or fauna species were recorded (including those identified as species credit-species under the BAM) during the site inspection completed on 23 August 2023.
    - While Vinegaroy Road reserve supports BC Act and EPBC Act listed Box Gum Woodland CEEC, this vegetation will not be impacted by the TWA Facility as an existing entry to the private property is being used.
- The TWA Facility will not impact protected animals because of impacts to flight path integrity.
- The TWA Facility will include the following measures to avoid and minimise impacts to BC Act and EPBC Act listed Box Gum Woodland CEEC within the Vinegaroy Road reserve for the duration of the life of the TWA Facility:
    - Demarcation of an exclusion zone for native vegetation/habitat to be retained.
    - Sediment and erosion control measures to avoid impacts to adjacent drainage line.
    - Training and site inductions for employees, contractors, and supervisors to include information on native vegetation/habitat to be retained within the exclusion zone and weed management requirements.

Overall, the proposed development is not likely to significantly impact native biodiversity and the requirements for a BDAR should be waived.

6.5 Heritage

An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared for the TWA Facility by Umwelt. The ACHA Addendum Report (Umwelt, 2023) is provided in **Appendix J**.

6.5.1 Consultation

Consultation with Aboriginal parties was undertaken in accordance with requirements prescribed by the National Parks and Wildlife Regulation 2019 (the NPW Regulation) and the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a) (the consultation requirements).

The Registered Aboriginal Parties (RAPs) remain unchanged from the original registration process undertaken for the Mod-1 ACHA. The registration of Aboriginal parties was completed in accordance with Part 5, Division 2 Clause 60 of the NPW Regulation. As a result of the project notification and registration process, 20 Aboriginal parties registered an interest in ongoing consultation regarding the project.

RAPs were notified about the requirements for further assessment of the TWA Facility, including archaeological survey, and RAP representatives were invited to participate in the survey program. The survey (Tuesday 26 September 2023) was to address two portions of land ear marked for the TWA Facility, including one site in Cassilis that was later discounted as an option by Tilt Renewables.

The ACHA was then provided to the registered Aboriginal parties for review and comment on 8 November 2023. Review comments received (as of 22 November 2023) from the Aboriginal parties on the proposed management measures included in the Draft ACHA were universally in support of the findings and management measures.

Feedback on the draft ACHA was requested by 6 December 2023. Feedback received to date has been included in the ACHA, with Umwelt attempting to contact all RAP's to confirm whether any additional feedback is outstanding, following this date the ACHA was finalised.

6.5.2 Impact Assessment

A survey of the TWA Facility Site took place on 26 September 2023 by Umwelt Senior Archaeologist Andrew Crisp and nine RAPs.

The survey was conducted as single transects (Survey Unit 1) equating to approximately 3.5 km long, due to the relatively small size of the TWA Facility Site. Survey participants were spaced between five to ten metres apart. The survey transect was walked on foot and recorded using GPS tracking.

The TWA Facility Site comprised landforms that do not provide direct access to perennial water resources, have limited depth of topsoil (within which subsurface deposits may be located) or have been substantially disturbed.

When considered with reference to the archaeological pattern identified within the local area and the criteria for differing levels of archaeological potential, the TWA Facility Site is assessed as having low archaeological potential. Low archaeological potential is defined as landscape areas that may have been utilised by Aboriginal people in the past, but at low intensity compared to other areas within the region. The density of artefacts deposited within these areas would therefore be low. This category also includes landscape areas of low terrain integrity, where geomorphic processes or human action may have redistributed artefacts from their deposited locations, resulting in site disturbance or destruction.

Two isolated Aboriginal objects were identified in the TWA Facility Site during visual inspection (LRWF_TWA_IF1 and LRWF_TWA_IF2). LRWF_TWA_IF1 is a chert flake located in an erosion scour on the side of the unsealed vehicle access to the property homestead. LRWF_TWA_IF2 is a chert flake located in a livestock track parallel to the south-western fence line. Neither location show subsurface potential due to shallow or non-existent soil profile.

No scarring or other cultural modification of native trees was observed in the TWA Facility Site.

No further Aboriginal cultural heritage objects or sites were identified as part of the survey and there is low potential for unknown sites to be present within the TWA Facility Site.

Considering the above, the proposed TWA will result in minor additional impacts to known Aboriginal objects when compared to the previously assessed Mod-1 Project Area and the Approved Project Area. It is also unlikely that additional measurable impacts will occur to any unknown Aboriginal objects as the TWA Facility Site is considered to have low archaeological potential.

6.5.3 Aboriginal Cultural Heritage Management and Mitigation Measures

The management measures presented in the Mod-1 ACHA (Umwelt, 2022) for the Mod 1 Project remain relevant for the TWA Facility Site, with the exception of the isolated objects identified in **Section 6.5.2**.

One additional management measure is proposed as part of this ACHA addendum. This management measure is as follows:

- LRWF_TWA_IF1 and LRWF_TWA_IF2 should be subject to surface collection and potential repatriation in accordance with the future Aboriginal Cultural Heritage Management Plan (ACHMP) should impact to these sites be unavoidable.

Accordingly, any future preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) for the RTS Project should be developed based on the measures set out in the Mod-1 ACHA (Umwelt, 2022) and include the above management measure.

6.6 Visual

A Visual Impact Assessment for the proposed TWA Facility was undertaken by Moir Landscape Architects (Moir), the results of the VIA are provided in the following section with the full report provided as **Appendix K**.

The methodology applied to the VIA is outlined in **Appendix K**. The VIA provides an assessment of the existing landscape character and the potential visibility of the TWA Facility. Potential visual impact of the proposed TWA Facility is based on the relationship between the visual sensitivity and visual magnitude.

Visual sensitivity refers to the qualities of an area, the number and type of receivers and how sensitive the existing character of the setting is to change. Visual magnitude refers to the extent of change that will be experienced by surrounding receptors.

The dominant landscape character of the area includes undulating hills utilised for agriculture.

6.6.1 Zone of Visual Influence

A zone of visual influence (ZVI) was prepared to establish the areas of theoretical visibility surrounding the TWA Facility site (the ZVI assumes a landscape without vegetation and is based on topography alone). The ZVI indicated that the TWA Facility may be partially visible to varying levels from parts of Vinegaroy Road, particularly to the southeast and from the town of Coolah to the east. Although, vegetation and existing built form is likely to assist in screening views.

6.6.2 Visual Impact Assessment

The findings of the ZVI were assessed from both public and private viewpoints with consideration of the influence of existing vegetation and other built structures and screen factors through fieldwork and the preparation of photomontages, the photomontages are provided in the VIA, refer to **Appendix K**.

Based on the detailed assessment, a combination of distance, vegetation and topography will assist in screening the proposed TWA Facility from public vantage points. In relation to private dwellings, a combination of existing vegetation associated with the neighbouring dwellings and the low horizontal extent of the TWA Facility Site and surrounding vegetation associated visual impact is predicted to be low.

The existing landscape character surrounding the TWA Facility site is highly modified to accommodate agricultural use. The introduction of temporary accommodation buildings and associated infrastructure is likely to alter the existing visual character, however due to the agricultural nature of the area there are low numbers of dwellings (receivers) in proximity to the TWA Facility site. Although the TWA Facility site is located near the town of Coolah, built form and vegetation is likely to assist in screening views to the TWA Facility. Due to this the VIA indicates the impact to the broader visual character will be low.

6.6.3 Visual Management and Mitigation Measures

Proposed mitigation measures to reduce the potential visual impacts include:

- Incorporation of screen planting utilising plant species endemic to the area to integrate the proposed developing with the existing landscape character, where required.
- Maximise retention of existing trees within the TWA Facility site to assist in screening views.
- Where possible use building materials with a recessive colour palette which blends into the existing landscape and reduces contrast. The type and colour of building materials used will be determined during the detailed design phase.
- Unnecessary lighting, signage on fences and logos will be avoided.
- All new fixed lighting associated with the TWA Facility (operational lighting and security lighting) will be installed and maintained in accordance with the Australian Standard AS4282 – 1995 – Control of Obtrusive Effects of Outdoor Lighting.
- Any proposed buildings will be sympathetic to the existing architectural elements in the landscape.

6.7 Hazard – Bushfire Threat

The TWA Facility Site is identified as bushfire prone land by the NSW Rural Fire Service (RFS) bushfire prone land mapping (NSW RFS, 2021) and therefore requires an assessment of hazards and risk associated with bushfire. This section provides a summary of the bushfire threat assessment undertaken for the TWA Facility Site in accordance with the Planning for Bushfire Projection 2019 (PBP (2019)), including an assessment of potential bushfire hazards applicable to the TWA Facility Site and the proposed bushfire management, refer to **Appendix L**.

The TWA Facility will result in increased residential density within the locality therefore consideration of issues listed in Chapter 8.2.1 (Increased Residential Density) is required. Section 8.2.1 states that increased resident densities of existing lots that are bushfire prone may heighten the level of risk to occupants. The presence of additional dwellings can impact on the evacuation and sheltering of residents during a bushfire.

The increased density requires consideration of the principles and criteria associated with subdivisions in bushfire prone areas. This includes ensuring Asset Protection Zones (APZs) based on a radiant heat threshold of 29 kW/m^2 for any new dwellings, along with suitable provision for construction access, water and landscaping.

6.7.1 Site Context

The TWA Facility Site is predominately cleared of vegetation with only minor remnant patches of vegetation and roadside remnant vegetation located along the southwest boundary. The surrounding land is also predominately cleared supporting predominately grassland vegetation. The topography across the TWA Facility Site is relatively flat, varying in elevation from 539 m Australian Height Datum (AHD) in the southeast to 519 m AHD in the north, refer to **Figure 2.3**. Slope alignment to vegetation includes:

- Grassland downslope 0–5 degrees to the north, east and southeast.
- Woodland/Forest Vegetation – upslope.

6.7.2 Assessment

The construction and operation of the TWA Facility will require the following Bushfire Protection Measures:

- A Bushfire Emergency Management Plan will be developed for the TWA Facility, in accordance with PBP (2019) and in consultation with the RFS. The TWA Facility is subject to detailed design, the BEMP will be developed during the detailed design phase with consideration of the requirements of PBP (2019). The plan will identify all relevant bushfire risks and mitigation measures associated with the TWA Facility, including:
    - detailed measures to prevent or mitigate fires igniting, outlining:
        - APZ locations and management requirements
        - access locations, passing bays and any alternate emergency access
        - water supply and any other bush fire suppression systems.

- work that should not be carried out during total fire bans during construction
- availability of fire-suppression equipment
- storage and maintenance of fuels and other flammable materials
- notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation during construction, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate
- appropriate bush fire emergency management and relevant evacuation plan.

- Minimum APZ distances calculated utilising PBP (2019) Table A1.12.2 (to achieve 29 kWm^2) include 24 m to forest vegetation and 12 m to grassland vegetation. Based on the conceptual layout significance separation is proposed between the proposed TWA Facility and the remnant vegetation located along the southwest boundary of the TWA Facility Site. Additionally, the siting of the TWA Facility can accommodate APZ's in excess of the minimum requirement under PBP (2019) in relation to all boundaries. The APZ's will be established during the construction phase and will continue to be maintained over the life of the TWA Facility in accordance with Appendix 5 of PBP (2019).
- Vehicle access to the TWA Facility Site will be provided via the existing site access and road network (directly from Vinegaroy Road). Given the nature of the existing public road network (providing two-way access from the North and South) and close proximity to the Coolah township broader access to the site is considered sufficient. Internal access roads will be designed in accordance with Chapter 5 of PBP (2019) during the detailed design phase.
- In accordance with the PBP (2019), the TWA Facility must ensure an adequate supply of water is provided that meets the NSW RFS requirements. This will include the following:
  - Dedicated on site firefighting water supply. The volume will be determined during the detailed design phase (depending on the configuration and separation of dwellings).
  - Provision of connection suitable for firefighting purposes located within the facility (65 mm Storz).
  - Fire hydrant/hose reel systems and all firefighting equipment installed and maintained in accordance with relevant Australian Standards.

The TWA Facility will not increase the potential for, or the severity of bushfires within the locality, however the resulting increased residential density requires consideration from a bushfire management perspective. The risk of onsite activities igniting fire during both construction and operation can be effectively avoided through the implementation of appropriate bushfire protection measures. With the implementation of a Bush Fire Emergency Management Plan, in consultation with the RFS, it is considered that potential bushfire risk associated with the TWA Facility can be appropriately managed.

6.8 Social

The assessments undertaken for the Original EIS and Mod-1 Assessment Report focused on economic benefits and impacts of the Project. A Social Assessment (SA) has been prepared to identify potential social impacts and opportunities as well as available management and mitigation measures for the proposed TWA Facility.

The SA constitutes a desktop review of social conditions in the TWA Facility's social locality and includes a high-level assessment of potential social impacts and management options, based on existing and available information. The SA is summarised in the following section with the full report attached as **Appendix M**.

6.8.1 Impact Assessment

Potential social impacts likely to be associated with the TWA Facility have been identified with a life-cycle focus, with consideration of design, construction, operation, and decommissioning activities. Impacts have been categorised according to social impact categories, including way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods, and decision-making systems. Identified potential impacts are presented in **Table 6.7** below. A more detailed analysis of potential impacts raised by community members is provided in **Appendix M**.

Table 6.7 Social Impact Summary

Impact	Community, Way of Life and Culture	Accessibility	Health and Well-being	Livelihoods	Surroundings	Decision-making systems	Cumulative
Surroundings							
Changes to sense of place and visual amenity due to industrialisation of the landscape							
Reduction in quality of valued natural environments and ecosystem services due to land clearing or potential water contamination							
Culture							
Disruption to cultural values and connection to Country							
Health and Well-Being							
Reduced public and road user safety due to increased traffic and road deterioration							
Livelihoods							
Increased employment and procurement opportunities							
Reduced livestock well-being and reduced capacity to conduct agricultural activities							
Potential for property devaluation affecting local livelihoods							
Decision-making systems							
Ability to engage with and inform project assessment and decision making							
Perceived inequity in distribution of project outcomes and benefits							

Source; Umwelt, 2023.

6.8.2 Social Impact Ranking

In relation to the TWA Facility, it is important to note that almost all impacts are temporary as the TWA Facility will only operate for approximately four years prior to demobilisation. The SA provides an overall summary of the social impacts in relation to the TWA Facility, which is reproduced as **Table 6.8**. Where construction impacts deviate substantially from operation impacts, this is indicated in the table.

Note that green indicates low impacts, yellow indicates moderate impacts, and red indicates high impacts. Where a Stakeholder Ranking is blank, this indicates that this particular impact or opportunity was not captured in stakeholder feedback or the surveys.

Table 6.8 Potential Social Impacts

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
Changes in peoples' sense of place due to land clearing, infrastructure development and visual amenity	TWA Facility construction and footprint Cumulative interaction with the Project	C & O 4 years	Negative	Neighbouring land holders Host landholders	H	C	2	M	Proactive engagement with relevant stakeholders prior to construction commencement and throughout the construction phase. Communicate strategies developed to reduce land clearing in Project engagement opportunities.	L
				Broader community Community groups		D	2	L		
Changes in valued ecosystems due to disruption to ecological values (e.g. disruption to key habitats)	TWA Facility construction Cumulative interaction with the Project	C & O 4 years	Negative	Broader community Environmental groups Host landholders	L	D	2	L	Site accommodation facilities to avoid areas of higher biodiversity value. The Biodiversity Development Assessment Report (BDAR) will guide best practice for avoiding and minimising biodiversity impacts within the Project site.	L
Impacts to visual amenity associated with the construction and operation of accommodation infrastructure including land clearing, causing changes to the rural character of the landscape.	TWA Facility construction Cumulative interaction with the Project	C & O 4 years	Negative	Neighbouring land holders	H	C	2	M	Maximising the use of natural topography and existing vegetation to minimise visual impacts. Direct engagement with the Associated Landholder to mitigate or offset visual impacts Retention of existing trees where possible. Strategic planting of new vegetation, landscaping design or other suitable measures to minimise visual impacts to public viewpoints and neighbouring land holders (as appropriate). Painting the TWA Facility buildings in a colour that blends with the existing landscape. Avoiding unnecessary lighting, signage, and logos. Neighbour Agreements may be available where off-site impacts can be demonstrated and supported by evidence.	L
				Broader community		D	2	L		L

[3] L = Likelihood (A: Almost Certain, B: Likely, C: Possible, D: Unlikely, E: Very Unlikely); M = Magnitude (1: Minimal, 2: Minor, 3: Moderate, 4: Major, 5: Transformational); S = Significance rating (L: Low, M: Medium, H: High, VH: Very High). P = Planning, C = Construction, O = Operation, D = Decommissioning.

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
Reduction in residents' sense of place and enjoyment of their homes and neighbourhood due to noise from the TWA Facility.	TWA Facility construction and operation activities	C & O 4 years	Negative	Neighbouring land holders	M	D	2	L	Construction and operation of the TWA Facility in line with the relevant noise criteria outlined in the Development Consent Consider noise mitigation as part of the design of the TWA Facility, including selection of low-noise air conditioning units and electrical generators, or constructing earth mounds or equipment baffles to block noise. Maintenance of a complaints register and system to record and proactively address any community complaints or concerns.	L
				Broader community		E	2	L		
Increase of waste and sewage created due to influx of incoming construction workforces utilising the facilities at the TWA Facility.	TWA Facility construction and operation activities	C & O 4 years	Negative	Proximal Communities Neighbouring landholders Local council	L	A	2	M	Plan life cycle of accommodation from start to account for and ensure removal of all waste created. Suitable storage of waste (landfill, green waste, recycling) on- or offsite and prompt transportation to licensed waste management facilities. Develop and implement a Waste Management Plan. Recycling and reusing materials from TWA Facility wherever possible. Development of an on-site sewage treatment system to avoid pressure on existing systems and avoid/minimise emission of odours to surrounding neighbours.	L
Construction activities leading to reduced social amenity due to noise, vibration, dust and lighting impacts.	TWA Facility construction	C Approx 3 months	Negative	Neighbouring land holders	M	C	2	M	Develop a Traffic Management Plan. Neighbour Agreements to be developed with directly impacted landholders along the construction transport route. Proactive engagement with relevant stakeholders prior to construction commencement and throughout the construction phase. Maintenance of a complaints register and system to record and proactively address any community complaints or concerns. Ensure neighbouring landholders have access to a dedicated site representative to discuss concerns.	L
				Broader community		D	2	L		L

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
Increased travel times for road users due to road closures and road deterioration during construction of accommodation facility.	Transport of construction equipment and materials and vehicle movements	C Approx 2 months	Negative	Local road users Local businesses Visitors and tourists Broader community Near neighbours	-	B	2	M	Develop a Traffic Management Plan. Early communication of impending road impacts to the community. Commit to maintenance and repair work to return the road to its previous standard.	L
Mental health impacts of TWA Facility lifestyle on Tilt Renewables worker's families	TWA Facility operations and impacts Residing workforce	C & O	Negative or Positive	Incoming construction workforce families	-	B	3	H	Flexible rosters and leave allowances. Benefits for workers and their families outside of working hours. Mobile phone and internet provision and reception. Provision of recreational facilities on the TWA Facility. Periodic mental health training for residing workforce and awareness of senior staff of importance of work-supported mental health training. Provision of healthy food options. Employee conflict resolution process set up and managed by Human Resources department. Consideration of an on-site well-being officer or working group to ensure worker's feedback is considered and actioned	M
Potential for construction of TWA Facility to affect people's connection to Country and ongoing cultural practices and values	TWA Facility activities and site footprint Cumulative interaction with other projects	C & O 4 years	Negative	Traditional Custodians First Nations communities	-	D	2	L	Undertake and implement mitigation strategies as outlined in the Aboriginal Cultural Heritage Assessment (ACHA) and Heritage Management Plan (HMP). Relevant communication material provided in appropriate or plain language formats.	L
Changes to sense of place, community composition, relations and levels of community cohesion due to influx of workforces to small	TWA Facility operations and impacts	C & O 4 years	Negative	Proximal communities	M	A	3	H	Demonstrate proactive, thorough and transparent community engagement, throughout the lifespan of the Project via the community engagement plan.	M

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
rural settlements during construction.	Cumulative interaction with other projects								Annual community engagement plan updated based on feedback from stakeholders from the previous here. Provide onsite food and recreational opportunities at the TWA Facility to reduce need for workforce to dominate the local community. Mandatory compliance with internal policies on respectful behaviour in surrounding towns. TWA Facility location, design and amenities to encourage workforce to remain on site for most of their daily needs	
Increased traffic leading to reduced road safety.	Transport of construction equipment and materials, personnel, and vehicle movements Cumulative interaction with other projects	C & O 4 years	Negative	Local road users Local businesses Road between TWA Facility and Coolah	H	C	3	M	Develop and implement a Traffic Management Plan. Optimising/upgrading road intersections where required for safety reasons. Communication of road works and upgrades to the wider community to help mitigate concerns around increased traffic. Consider the use of shuttle buses to transport workers from the TWA Facility to the Project site and into Coolah for key events.	M
				Broader community Visitors and tourists		D	2	L		L
Real or perceived increase in antisocial behaviour due to an influx of incoming construction workforce.	TWA Facility operations and impacts	O 4 years	Negative	Proximal Communities Road users	H	C	3	M	Workers residing in TWA Facility to sign on to a Code of Conduct that specifies minimum acceptable behaviour. Disciplinary action will apply to breaches of the Code of Conduct. Mandatory compliance with internal policies on respectful behaviour in surrounding towns. Consider implementing a 'dry site' to avoid alcohol consumption at the TWA Facility. Twice yearly (or as needed) meetings with police to discuss issues and provide updates. On-going liaison with Upper Hunter Shire Council and Warrumbungle Shire Council to ensure open communication and identification of emerging issues. Onsite drug testing for workers.	M

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
Reduced access to health services due to competition for facilities with incoming construction workforce.	TWA Facility operations and impacts Cumulative interaction with other projects	O 4 years	Negative	Broader Community Health services Population with health vulnerabilities Local Government	H	B	4	H	Provide on-site medical staff throughout the operation of the TWA Facility to meet the needs of the Project. Engage with impacted local councils to advocate for the use of VPA funds on local health initiatives, especially in Coolah and Cassilis. Consider use of Community Benefit Sharing Plan funds to support local health initiatives.	L
Increase in local economic benefit associated with incoming construction workforces utilising facilities and businesses located in proximal towns	TWA Facility operations and impacts Cumulative interaction with other projects	O 4 years	Positive	Proximal Communities	M	B	2	M (Positive)	Communicate with local businesses before and during Project construction to aid in preparing for an incoming workforce so they can consider work opportunities. Partnering with local businesses to supply key services onsite such as laundry, catering and cleaning services. Develop a short local Procurement Policy for local businesses. Develop a list of potential local businesses that could support during the TWA Facility construction (and later operations) period.	H (Positive)
Real or perceived risk of the devaluation of properties due to the presence of the TWA Facility	TWA Facility impacts	C, O & D 4 years	Negative	Neighbouring land holders	M	D	3	M	Strategic planting of new vegetation, landscaping design or other suitable measures to minimise visual impacts to public viewpoints and neighbouring land holders (as appropriate). Implement design and management plans to reduce impacts associated with noise, traffic, dust and waste impacts. Minimise the amount of time the TWA Facility is located onsite and operational and facilitate the immediate removal of the TWA Facility after use.	L
Local employment generation leading to job opportunities associated with the TWA Facility for local community members.	Construction and Operational Workforce requirements	C & O 4 years	Positive	Local businesses and service providers Local job seekers Broader community	M	B	2	M (Positive)	Implement the Accommodation and Employment Framework to increase local employment outcomes. Assess procurement and employment outcomes annually through measurements. Work collaboratively with other proponents in the CWO REZ to identify opportunities to coordinate	H (Positive)

Impact	Project aspect	Duration and Phase[3]	Positive/ Negative	Stakeholder Group(s)	Stakeholder Ranking (where available)	Social Impact ranking [3]			Identified mitigation or management measures	Post mitigation ranking
						L	M	S		
	Cumulative interaction with other projects								and collaborate on training and employment outcomes. Embed local procurement and employment merit criteria considerations in issuing of work tenders.	
Local procurement opportunities leading to direct investment in local businesses and flow-on benefits from economic stimulus.	Construction and Operational Workforce requirements Cumulative interaction with other projects	C & O 4 years	Positive	Local businesses and service providers Proximal Communities	M	B	3	**H (Positive)**	Develop and implement an Accommodation and Employment Framework. Embed local procurement merit criteria considerations in issuing of tenders.	**H (Positive)**

6.8.3 Social Management and Mitigation Measures

Tilt Renewables has already undertaken or will undertake the following management and mitigation measures. Further details of the key objectives and implementation of these measures are provided in **Appendix M**:

- Tilt Renewables will develop and implement a Social Impact Management Plan (SIMP) as part of the TWA Facility OEMP. The Social Assessment (Appendix M) includes a preliminary SIMP.
- Tilt Renewables applies a Community Engagement Plan to manage engagement and information sharing surrounding the Project, including ancillary uses such as the TWA Facility. The objectives of this plan are to focus current engagement activities within the community on those issues of key concern to the community, (as identified through the consultation program) and track and monitor community issues and perceptions of the Project over time and evaluation of the success of management to manage social impacts.
- Tilt Renewables has a Complaints Handling Procedure that encompasses the Project, including the TWA Facility. It outlines appropriate and timely resolution of complaints and aids in social impact monitoring and evaluation.
- Tilt Renewables has several existing arrangements in place designed to directly fund infrastructure and community initiatives in the region. This includes but not limited to a Voluntary Planning Agreement with a dedicated Community Enhancement Fund (CEF), as well as mandatory contributions via CWO REZ Access Fees – both these aspects form part of the company's overall Benefit Sharing Plan for the Project. As the TWA Facility is an ancillary to the Project, it would also be covered under these arrangements.
- Tilt Renewables has developed an Accommodation and Employment Framework (AEF). The AEF includes activities to maximise benefits to the local economy and business community and to manage the potential cumulative impacts on the local housing/accommodation market. Central to this AEF is a plan to deliver Temporary Workers Accommodation, local procurement and employment initiatives and skills and training mechanisms.

Tilt Renewables are committed to the development and/or implementation of several plans and strategies, such as environmental management plans, noise and visual impact mitigation and traffic management strategies; as well as a number of social impact management strategies, including development of a Community Engagement Plan, an Accommodation and Employment Framework, and a Community Benefit Sharing Plan. The implementation of such strategies will assist in reducing any negative social impacts that may occur because of the TWA Facility and, where possible, should be developed in consultation with key stakeholders.

Independent assessments for visual and noise impacts have found that the TWA Facility will have minimal negative impacts from these factors, and that any impacts may be mitigated through the appropriate management plans. Further, the TWA site has been assessed as having low ecological value. The SIA has found that all negative social impacts, apart from temporary impacts related to population influx, real or perceived experience of anti-social behaviour, traffic impacts for areas immediately surrounding the TWA Facility and potential impacts on residents of the TWA Facility receive a post-mitigation ranking of low. Further to this, this assessment provides an overview of social mitigation strategies identified to reduce social impacts generated by the TWA Facility. The combination of these mitigation and control measures have been developed to reduce negative impacts and enhance positive impacts are far as possible.

6.9 Land Use Conflict

A land use risk identification and ranking process has been undertaken in accordance with the DPI Land Use Conflict Risk Assessment (LUCRA) Guide (2011). The LUCRA assessment process, utilises a 'probability and consequence' risk assessment matrix (refer to **Table 6.9**) to estimate the potential for land use conflicts. It assesses the environmental, public health and amenity impacts of a proposed development according to the probability of occurrence and consequence of the impact.

Table 6.9 LUCRA Risk Rating Matrix

Consequence	Probability				
	A	B	C	D	E
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

The risk rating matrix yields a risk ranking from 25 to 1. It covers each combination of five levels of 'probability' (a letter A to E as defined in **Table 6.10**) and five levels of 'consequence' (a number 1 to 5 as defined in **Table 6.11**) to identify the risk ranking of each impact. For example, an activity with a 'probability' of D and a 'consequence' of 3 yields a risk rank of 9.

Table 6.10 Probability Descriptions

Level	Descriptor	Description
A	Almost Certain	Common or repeating occurrence.
B	Likely	Known to occur, or 'it has happened'.
C	Possible	Could occur, or 'I've heard of it happening'.
D	Unlikely	Could occur in some circumstances, but not likely to occur.
E	Rare	Practically impossible.

Table 6.11 Consequence Descriptions

Level	Descriptor	Description
1	Severe	• Severe and/or permanent damage to the environment. • Irreversible. • Severe impact on the community. • Neighbours are in prolonged dispute and legal action involved.
2	Major	• Serious and/or long-term impact to the environment. • Long-term management implications. • Serious impact on the community. • Neighbours are in serious dispute.

Level	Descriptor	Description
3	Moderate	• Moderate and/or medium-term impact to the environment and community. • Some ongoing management implications. • Neighbour disputes occur.
4	Minor	• Minor and/or short-term impact to the environment and community. • Can be effectively managed as part of normal operations. • Infrequent disputes between neighbours.
5	Negligible	• Very minor impact to the environment and community. • Can be effectively managed as part of normal operations. • Neighbour disputes unlikely.

Table 6.12 contains an initial risk evaluation of activities that may cause potential land use conflict, and a risk rating generated in the absence of mitigation or management measures, note this relates to land use impacts and not social related impacts which are addressed in the SA. The range of risk management strategies (mitigation measures) that have been identified through the preparation of the specialist assessments are also included in **Table 6.12** to reduce the risk rating of the potential land use incompatibilities highlighted, and thus reduce the risk associated with land use conflicts for the proposed TWA Facility. The objective is to identify and define controls that lower the risk ranking score to 10 or below. All mitigation measures proposed by Tilt Renewables have resulted in the reduction of risk rating to below 10 for all identified potential land use conflicts (refer **Table 6.12**).

Table 6.12 Potential Conflicts and Risk Reduction Management Strategies

Activity	Identified Potential Conflict	Risk Rating (unmitigated)	Risk Reduction Management Strategy (mitigation measures)	Risk Rating (mitigated)	Performance Target
Construction	Generation of dust on site due to site due to construction activities as well as increased traffic movements on unsealed roads which can impact human and environmental health.	8	Environmental Management Plan (EMP) will include air quality management measures to be implemented during construction.	5	No exceedances of air quality criteria.
	Increased traffic movements to and from the TWA Facility potentially resulting in traffic hazards, particularly on Golden Highway, Vinegaroy Road, Rotherwood Road, Turee Vale Road, and Coolah Creek Road.	**17**	Implementation of appropriate traffic control measures consistent with approved Project Consent Conditions.	9	No traffic incidents or near misses during construction that are directly related to the TWA Facility.
	Increased traffic volumes potentially impacting/ degrading the physical condition of local roads, particularly on Golden Highway, Vinegaroy Road, Rotherwood Road, Turee Vale Road, and Coolah Creek Road.	**12**	Potential impacts to road conditions can be appropriately managed and mitigated through compliance with TMP as required under the approved Project Development Consent.	8	Any related damage to road network is rectified in a timely manner.
	Excess noise generated during construction above relevant criteria – impacting amenity.	8	EMP will include noise management measures to be implemented during construction.	5	No exceedance of relevant criteria.
	Land erosion as a result of construction activities resulting in sediment runoff entering nearby water bodies, impacting the surrounding landholder water quality and beneficial use of the water.	9	• Erosion and sediment control plans developed as part of the EMP and erosion and sediment controls implemented for construction works. • Implementation of appropriate water management (subject to detailed design).	5	Control of sediment on site and appropriate management of water.

Activity	Identified Potential Conflict	Risk Rating (unmitigated)	Risk Reduction Management Strategy (mitigation measures)	Risk Rating (mitigated)	Performance Target
	Increased bushfire risk from within the site due to construction activities.	9	A Bushfire Emergency Management Plan (as part of the EMP) will be developed for the TWA Facility in accordance with PBP (2019) and in consultation with the RFS.	5	No fires caused by construction activities.
	Poor weed and invasive pest management associated with the Project that may spread or impact neighbouring land.	5	• EMP will include controls for weed management including weed inspection and treatment/removal and controls for feral animal management to be implemented should any pest issues be identified. • Onsite rubbish receptacles and waste management activities will be managed to minimise the potential for any food sources to be available to feral animals.	3	Invasive weed species are managed so that no weeds from the site spread. No complaints from neighbours. Feral animal populations are kept.
Operation	Loss of local amenity and visual amenity (including night lighting) from the Project.	9	• Management of the Project layout and design, in particular the siting, access, layout and other general principles of design, this includes elements such as reflecting the natural landscape where practicable. • Use of non-reflective neutral colour scheme, sympathetic to the surrounding landscape. • All new fixed lighting associated with the TWA Facility (operational lighting and security lighting) will be installed and maintained in accordance with the Australian Standard AS4282 – 1995 – Control of Obtrusive Effects of Outdoor Lighting.	7	Implementation of the management and mitigation measures within a reasonable time frame and as agreed with landholders.

Activity	Identified Potential Conflict	Risk Rating (unmitigated)	Risk Reduction Management Strategy (mitigation measures)	Risk Rating (mitigated)	Performance Target
	Increased bushfire risk from within the site and risk to human life associated with residential occupation from bushfire spreading to the site.	9	A Bushfire Emergency Management Plan (as part of the EMP) will be developed for the Project in accordance with PBP (2019) and in consultation with the RFS.	5	No fires caused during operation, no impact to human health resulting from bushfire.
	Potential noise impacts associated with operation of the TWA Facility.	**17**	Implementation of noise mitigation (applicable to inhabitants of the TWA Facility) during operations.	9	No noise related complaints from neighbours during operation.
	Increased traffic volumes potentially creating safety issues and impacting/ degrading the physical condition of local roads, particularly on Golden Highway, Vinegaroy Road, Rotherwood Road, Turee Vale Road, and Coolah Creek Road.	**12**	The introduction of the proposed TWA Facility is considered to be an improvement from a traffic and transport perspective. Potential traffic and transport impacts can be appropriately managed and mitigated through appropriate intersection design and compliance with Traffic Management Plan (TMP) as required under the Development Consent for the Project.	8	No traffic related incidents during operation.
Decommissioning	Increased traffic volumes potentially generating dust impacting on human health and impacting/degrading the physical condition of local roads, particularly on Golden Highway, Vinegaroy Road, Rotherwood Road, Turee Vale Road, and Coolah Creek Road.	8	Preparation of appropriate decommissioning and rehabilitation plan will include review of road condition and development of management and mitigation measures as required.	5	Any damaged or degraded roads caused by increased traffic is to be repaired in a timely fashion.
	Increased traffic movements to and from the TWA Facility potentially resulting in traffic hazard.	**13**	Continued implementation of Project TMP.	9	No traffic incidents during decommissioning that are directly related to the Project.
	Excess noise generated during decommissioning above relevant criteria – impacting amenity.	8	Continued implementation of noise management and mitigation measures as outlined in the EMP.	5	No unpredicted exceedances of relevant noise criteria.

Activity	Identified Potential Conflict	Risk Rating (unmitigated)	Risk Reduction Management Strategy (mitigation measures)	Risk Rating (mitigated)	Performance Target
	Inadequate removal of infrastructure including commercial and industrial wastes.	9	Removal of infrastructure (except where certain infrastructure is agreed to be retained with the landholder) and remediation of disturbed areas.	6	All waste removed. Materials recycled where feasible and practical.
	Increased bushfire risk from within the site as a result of decommissioning activities.	9	Continued implementation of Bushfire Management Measures through EMP.	5	No fires caused by decommissioning activities.

7.0 Justification

This section provides a justification of the proposed Amendment, taking into consideration the environmental, social and economic impacts, as compared to the Approved Project and in addition to the justification for the Project (as per the RTS Project Amendment Report) the strategic context and suitability of the Project site. The proposed Amendment is also considered in the context of the principles of ecologically sustainable development (ESD) as defined in Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation).

7.1 Environmental, Economic and Social Impacts

Tilt Renewables are proposing the amendment to address concern raised by the community and local government in relation to construction impacts associated with the Approved Project. The proposed Amendment would reduce traffic related impacts and impacts to services (particularly accommodation), with proposed management and mitigation measures addressing any residual or additional impact created.

Tilt Renewables has undertaken extensive investigation into potential alternative approaches and locations for the proposed Amendment, consulted the community of Coolah and Cassilis and undertaken extensive environmental assessment with the aim of minimising associated environmental, cultural and social impacts.

The environmental, cultural, social, and economic impacts of the proposed Amendment have been identified and were subject to a detailed environmental assessment based on:

- assessment of the site characteristics (existing environment)
- engagement with the local community and other stakeholders
- environmental and social risk analysis
- application of the principles of ESD, including the precautionary principle, intergenerational equity, conservation of biological diversity and valuation and pricing of resources
- expert technical assessment.

The key issues associated with the proposed Amendment were subject to comprehensive specialist assessments to identify the potential impacts on the existing environment and community. These assessments are summarised in **Section 6.0,** with further detail provided in the relevant specialist assessments provided as appendices to this Amendment Report.

As highlighted in **Section 6.0**, the potential environmental, cultural and social impacts associated with the proposed Amendment can be managed through the implementation of appropriate management, mitigation and monitoring measures.

7.2 Strategic Context

NSW is in a transition to build a reliable, affordable and sustainable electricity future with the NSW Government taking action to deliver more affordable, reliable and clean electricity for homes and businesses in NSW (EnergyCo, 2023). The CWO REZ was formally declared on 5 November 2021 under the Electricity Infrastructure Investment Act 2020 with the Project representing one of the largest approved projects within the REZ. Recognizing the size of and approved status of the project, as well as Tilt's track-record in delivering renewable projects, Tilt Renewables and the LRWF Project were designated Candidate Foundation Generator (CFG) status in 2022 which has provided Tilt Renewables the opportunity to negotiate outcomes with EnergyCo and the Consumer Trustee as part of the rollout of the CWO REZ. The NSW Government has indicated that REZs will play a vital role in delivering affordable energy generation to help prepare the State for the retirement of thermal power stations over the coming decades. The current amendment does not change the overall strategic context of the Project, rather, provides for ancillary development to facilitate the construction of the Project, increasing the financial viability and reducing the associated impacts to the community.

There is a significant number of current renewable projects within the Central-West Orana REZ including those in development, under assessment, being constructed or in operation. While these projects bring significant benefit to the region through investment and employment opportunities, demand for services particularly accommodation has the potential to cause significant impacts, through individual projects as well as cumulatively. Tilt Renewables is proposing the TWA Facility to directly address this issue.

7.3 Site Suitability

Tilt Renewables are proposing the current amendment as a direct response to the identified need to address constructability issues associated with the Project. The location for the TWA Facility has been subject to a site selection process aiming to reduce the environmental, social and cultural impacts as far as practicable.

The suitability of the TWA Facility Site is based on:

- Consultation with the Coolah and Cassilis community in relation to the potential alternative locations.
- Proximity to the Project to reduce travel time as far as practical for the Project workforce.
- Located within a heavily modified landscape, comprising of existing agricultural land mapped as Category 1 vegetation to minimise impact to biodiversity and Aboriginal archaeology.
- Suitable topography and allowing for siting infrastructure outside of 1% annual exceedance probability (AEP) flood depths.
- Suitable connectivity to existing road network to facilitate construction and use of the TWA Facility and vehicle movement once operational.
- Suitable distance to nearby dwellings and sensitive land uses to avoid/minimise impacts on nearby residents and the local community while also providing a suitable distance (>2 km) to the Coolah township.

7.4 Ecologically Sustainable Development

To justify the proposed Amendment with regard to the principles of ESD, the benefits of the amendment in an environmental and socio-economic context should outweigh any negative impacts. The principles of ESD encompass the following:

- The precautionary principle.
- Intergenerational equity.
- Conservation of biological diversity.
- Valuation, pricing and incentive mechanisms.

An assessment of the proposed Amendment against the principles of ESD is provided in the sections below.

7.4.1 The Precautionary Principle

The EP&A Regulation defines the precautionary principle as:

> *'if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*
>
> - *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment*
> - *an assessment of the risk-weighted consequences of various options.'*

In order to achieve a level of scientific certainty in relation to potential impacts associated with the proposed Amendment, extensive evaluation of all the key components of the proposed TWA Facility has been undertaken. Detailed assessment of all key issues and necessary management measures has been undertaken and is comprehensively documented in this Assessment Report.

The assessment process has involved detailed studies of the existing environment, consideration of constraints and alternatives, where applicable the use of scientific modelling to assess and determine potential impacts. The overarching goal of the proposed Amendment is to address and reduce the predicted impacts associated with the Approved Project and to facilitate efficiency in construction activities. To this end, there has been careful evaluation to avoid/minimise the risk of irreversible damage to the environment, wherever possible.

The decision-making process for the siting, design, impact assessment and development of management processes has been transparent through the consultation process with both government authorities, landowners and the Coolah and Cassilis community.

Consistent with the precautionary principle, the environmental assessment of the proposed Amendment has sought to minimise environmental impact through the avoidance of impacts and a range of mitigation measures are proposed to address identified residual impacts.

7.4.2 Intergenerational Equity

The EP&A Regulation defines the principle of intergenerational equity as:

> *'... that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.'*

Intergenerational equity refers to equality between generations. It requires that the needs and requirements of today's generations do not compromise the needs and requirements of future generations in terms of health, biodiversity and productivity.

The key benefit of the Project is the potential it provides for a strong positive contribution to energy capacity, reliability and security in the transition away from coal-fired power generation to renewables to protect the future generation. The proposed Amendment contributes to the realisation of that potential through facilitating construction of the Project. The TWA Facility will address significant demand for accommodation for the Project construction workforce and impact to services in the region, while enabling the construction of the Project to occur.

7.4.3 Conservation of Biological Diversity

The EP&A Regulation identifies that the principle of conservation of biological diversity and ecological integrity should be a fundamental consideration in the decision-making process. The conservation of biological diversity refers to the maintenance of species richness, ecosystem diversity and health and the links and processes between them.

The design of the proposed Amendment includes measures to minimise impacts on the abundance and distribution of flora, fauna and ecological communities for the short and long term, including but not limited to:

- Siting the TWA Facility within Category 1 (Exempt Land) avoiding impact to biodiversity.
- Development and implementation of biodiversity offsets strategy in accordance with the requirements of applicable state and Commonwealth polices and regulations.

All environmental components, ecosystems and habitat values potentially affected by the proposed Amendment have been assessed which includes detailed measures to avoid and minimise impacts to biodiversity.

7.4.4 Valuation Principle

The goal of improved valuation of natural capital is included in Agenda 21 of Australia's Intergovernmental Agreement on the Environment. The principle has been defined in the EP&A Regulation as follows:

> *… that environmental factors should be included in the valuation of assets and services, such as:*
>
> *(i) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement;*

(ii) *the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste; and*

(iii) *environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

Tilt Renewables has intrinsically valued the environmental resources by designing the Project to avoid and minimise potential environmental and social impacts as much as practicable. Tilt Renewables have applied this approach to the siting and design of the TWA Facility. The Project and proposed Amendment is considered to be consistent with the valuation principle of ESD as Tilt Renewables will be required to pay the full costs associated with:

- Ensuring the Project is designed and implemented in accordance with the relevant standards.
- Offsetting residual impacts to biodiversity in accordance with State and Commonwealth guidelines.
- Management measures to minimise potential environmental and social impacts.

Implementing the mitigation measures for the Project and the proposed Amendment would impose an economic cost on Tilt Renewables, increasing both the capital and operating costs of the Project so as to provide sound environmental outcomes. In this manner, environmental resources have been given appropriate valuation.

The Project and proposed Amendment are considered ecologically sustainable, due to the social, economic and environmental benefits discussed, and the mitigation measures put in place to protect from adverse impacts on the environment.

8.0 Conclusion

As outlined in **Section 7.4**, the Project and the proposed Amendment has been assessed against the principles of ESD as required by the EP&A Act and EP&A Regulation. This assessment has indicated that while the Project and proposed Amendment, like any large-scale development, has associated environmental and social impacts, these impacts can be effectively managed, mitigated and offset and the development will result in social and economic benefit to the region.

The Project representing one of the largest approved projects within the REZ, is aligned with the NSW and Commonwealth governments' energy and climate policies and will make a meaningful contribution to achieving the goal of net zero emissions by 2050. The proposed Amendment is a direct response to an identified need and provides for ancillary development to facilitate the construction of the Project, increasing the financial viability and reducing the associated impacts. The assessment therefore concludes that the Project and proposed Amendment are consistent with the principles of ESD.

The environmental impact of the TWA Facility can be managed within acceptable environmental standards with the implementation of appropriate controls as documented and implemented in accordance with an EMP.

The benefits of the Project are clear and outlined in the Mod 1 Assessment Report and RTS Amendment Reports. The key benefits of the proposed Amendment include:

- Improve road safety and lower the potential for driver fatigue through reducing the distance associated with workforce movements by providing accommodation within the vicinity of the Project.
- Increase in local economic benefit associated with incoming construction workforce utilising facilities and businesses located in proximal towns whilst not impacting local housing stock.
- Local employment generation leading to additional job opportunities associated with the TWA Facility for local community members.

With the implementation of the management, mitigation and offset measures proposed by Tilt Renewables, it is considered that the proposed Amendment would result in a net benefit to the NSW community, and therefore warrants approval.

9.0 References

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