Tallawang Solar Farm

SUBMISSIONS REPORT

FINAL

May 2024

umwelt
Environmental & Social Consultants

Tallawang Solar Farm

Submissions Report

Final

Prepared by Umwelt (Australia) Pty Ltd
on behalf of RES Australia Pty Limited

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Report No.:	21139/R15
Date:	May 2024

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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.

Disclaimer

Document Status

Rev No.	Review Name	Review Date	Approver Name	Approval Date
Final	Malinda Facey	7 May 2024	Malinda Facey	7 May 2024

Executive Summary

RES Australia Pty Ltd (RES) is proposing to develop the Tallawang Solar Farm (the Project) to generate renewable energy for the people of New South Wales (NSW). The Project is situated in the Central West Orana Renewable Energy Zone (CWO-REZ), approximately 8 km northwest of Gulgong in the Mid-Western Regional Local Government Area (LGA).

The Project is proposed to include up to 500 megawatts (MW) of solar electricity generation with a Battery Energy Storage System (BESS) and associated infrastructure and works. The Project is proposing to connect to the grid via the proposed CWO-REZ Transmission Project currently being developed by the NSW Government to support the growth of the CWO-REZ.

The Environmental Impact Statement (EIS) for the Tallawang Solar Farm (Umwelt, 2022) was placed on public exhibition from 28 October to 24 November 2022. During the exhibition period, 70 submissions were made on the Project. These comprised 16 government agency submissions and 54 community / organisation submissions. Of the 54 community / organisations submissions, 52 objected to the Project whereas two supported the Project. This Submissions Report provides a summary of actions since exhibition, details the comments provided in the public submissions phase of the EIS, analysis of these submissions and offers a detailed response to each.

Following exhibition of the EIS, RES has continued to consult with agencies, landholders and key stakeholders. Ongoing consultation and consideration of the submissions received has led to some proposed amendments to the Project, as being presented in the EIS. An Amendment Report (Umwelt, 2024) has been prepared to assess the proposed amendments and identify additional or new management and mitigation measures for the Project. Amendments to the Project as presented in the EIS are: the inclusion of a Temporary Workers Accommodation (TWA) facility, updated treatment for the proposed intersection upgrade at the newly proposed site access on the Castlereagh Highway, removal of the proposed 13 km overhead transmission line traversing through the Barneys Reef Wind Farm (as its now proposed as part of the Energy Corporation of NSW (EnergyCo) CWO-REZ Transmission Project), increased BESS capacity, minor layout refinements and minor readjustment of the Project Area boundary.
This Submissions Report should be read in conjunction with the Amendment Report.

The Tallawang Solar Farm represents an essential part of the energy transition and:

- Is a direct response to the NSW and Commonwealth's Government's commitments to transition to renewable electricity generation in NSW.
- Will materially assist in addressing this shortfall by delivering approximately 500 MW of renewable energy capacity to the National Electricity Market (NEM) to help reduce the need to keep coal fired power stations like Eraring Power Station online beyond their current committed retirement date.
- Also support the firming and storage of renewable energy in NSW through the development of a 500 MW BESS within the Project Area.

- Contribute significant capital investment within the Central West region of NSW, but particularly for the Mid-Western Regional LGA, providing indirect benefits to local services throughout the life of the Project (e.g. indirect employment creation in local and regional economies would include jobs supported through transportation, trade supplies, services, accommodation, catering, retail services, etc.), delivering additional income to host and other associated landowners, and providing benefits to the local community through the implementation of the proposed Community Benefit Sharing Program and planning agreement with Mid-Western Regional Council.

The Project represents an essential part of the energy transition with a fully optimised constructible design. The Amendment Report (2024) confirms that, efforts have been made as a priority to avoid impacts and when this is not possible the extent of these impacts has been minimised to the extent practicable through the design management and mitigation. Offset measures have been committed to address the residual impacts.

Abbreviations

Term/Abbreviation	Definition
AC	Alternating Current
ACHAR	Aboriginal Cultural Heritage Assessment Report
AES	Accommodation and Employment Strategy
AHIMS	Aboriginal Heritage Information Management System
APZ	Asset Protection Zones
BAM	Biodiversity Assessment Methodology
BAM-C	Biodiversity Assessment Method Calculator
BC Act	NSW Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BSAL	Biophysical Strategic Agricultural Land
CEMP	Construction Environmental Management Plan
CSEP	Community and Stakeholder Engagement Plan
CTMP	Construction Traffic Management Plan
CWO-REZ	Central West Orana Renewable Energy Zone
DC	Direct Current
EIA	Economic Impact Assessment
EIS	Environmental Impact Statement
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EP&A Regulation	NSW Environmental Planning and Assessment Regulation 2021
FRNSW	Fire & Rescue NSW
FTE	Full Time Equivalent
HIPAP	Hazardous Industry Planning Advisory Paper
km	kilometres
kV	kilovolt
LEP	Local Environmental Plan
LGA	Local Government Area
LLS	Local Land Services
LVIA	Landscape and Visual Impact Assessment
m	Metres
MW	Megawatt (unit of power equivalent to 1 million watts)
NEM	National Electricity Market
OEMP	Operational Environmental Management Plan
OSOM	Oversize Overmass
PHA	Preliminary hazard analysis
PV	Photovoltaic
RAP	Registered Aboriginal Party

Term/Abbreviation	Definition
REAP	Renewable Energy Action Plan
REZ	Renewable Energy Zone
RFS	NSW Rural Fire Service
SAII	Serious and Irreversible Impacts
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SISD	Safe Intersection Sight Distance
SWMP	Soil and Water Management Plan
TIA	Traffic Impact Assessment
TWA	Temporary Workers Accommodation
VPA	Voluntary Planning Agreement
WRIA	Water Resources Impact Assessment

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1.0 Introduction

RES Australia Pty Ltd (RES) is proposing to develop the Tallawang Solar Farm (the Project) to generate renewable energy for the people of New South Wales (NSW). The Project is located in the Central West region of NSW, approximately 8 km northwest of Gulgong in the Mid-Western Regional Local Government Area (LGA). The Project's location and regional context is presented in **Figure 1.1**.

The Project is a direct response to the NSW Government's commitment to transition to renewable electricity generation. The Project is located within the Central West Orana Renewable Energy Zone (CWO-REZ), established under the *NSW Government's Electricity Strategy* (2019) and *Electricity Infrastructure Roadmap* (2020). The Project would contribute to achieving State and Federal commitments for establishing reliable, affordable and sustainable electricity generation within NSW.

The Project will involve up to 500 megawatts (MW) of solar electricity generation with a Battery Energy Storage System (BESS) and associated infrastructure and works. The Project is proposing to connect to the grid via the proposed CWO-REZ transmission corridor (as shown on **Figure 1.1**) currently being developed by the NSW Government to support the growth of the CWO-REZ.

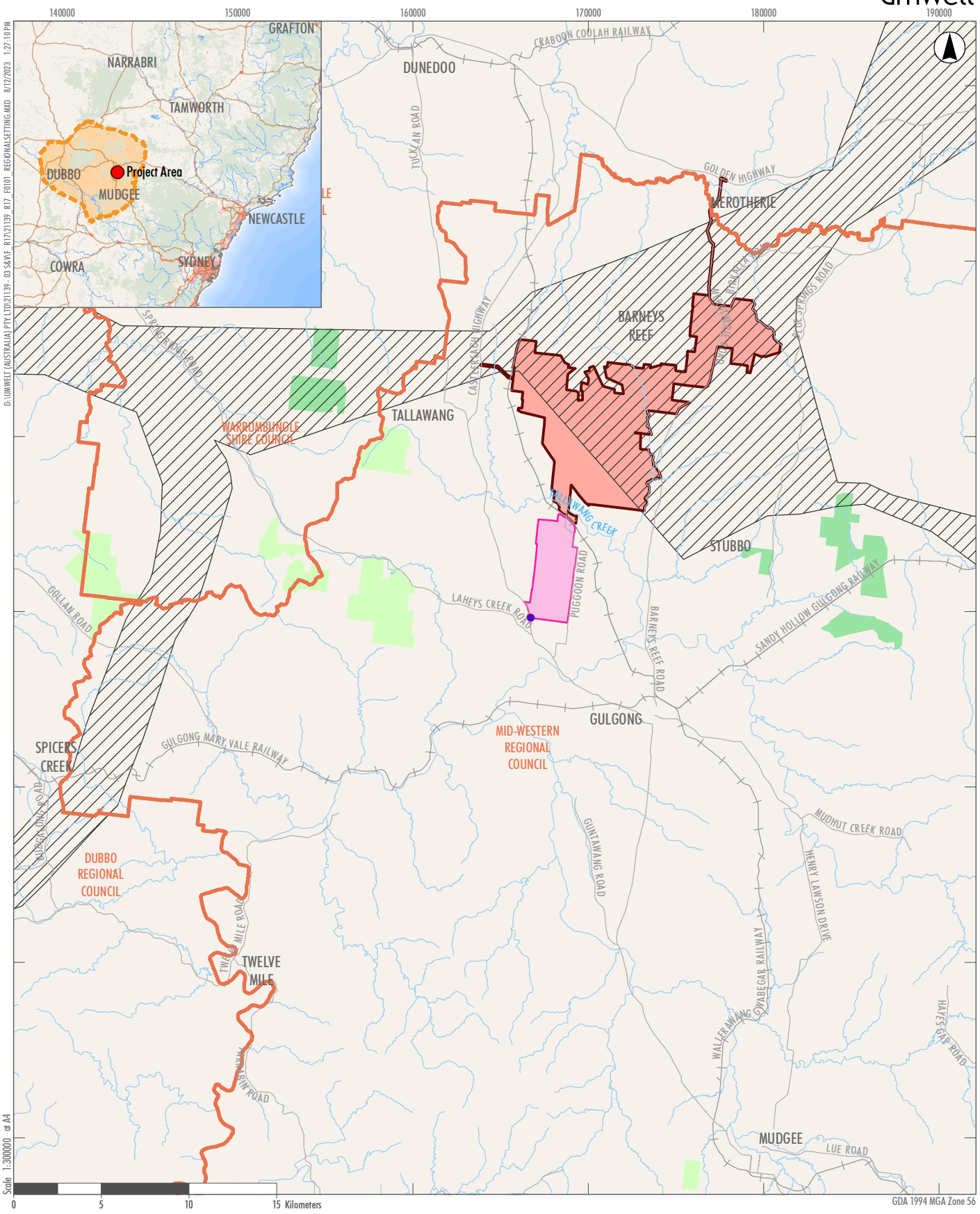
Approval for the Project is being sought under the State Significant Development (SSD) provisions (Division 4.7) of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as the Project is declared to be SSD under *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP).

The Environmental Impact Statement (EIS) for the Tallawang Solar Farm (Umwelt, 2022) was placed on public exhibition from 28 October to 24 November 2022. During the exhibition period, 70 submissions were made on the Project. These comprised 16 government agency submissions and 54 community / organisation submissions. Of the 54 community / organisations submissions, 52 objected to the Project whereas two support the Project. A detailed analysis of the submissions is provided in **Section 2.0**.

In correspondence dated 25 November 2022, the former Department of Planning and Environment (DPE) (now the Department of Planning, Housing and Infrastructure (DPHI)) requested that a Submissions Report, detailing the response to issues raised in the submissions and agency advice, be prepared and submitted.

This Submissions Report has been prepared in response to this request in accordance with clause 59(2) of the *Environmental Planning and Assessment Regulation 2021* and having regard to the *State Significant Development Guidelines – Preparing a Submissions Report (Appendix C of the State Significant Development Guidelines)* (DPE, 2022) (Submissions Report Guideline). This Submissions Report also provides further details of ongoing stakeholder engagement activities that have been undertaken since the EIS was submitted to DPE in October 2022, including both agency and community engagement activities.

Following exhibition of the EIS, RES has continued to consult with agencies, landholders and key stakeholders. Ongoing consultation and consideration of the submissions received has led to some proposed amendments to the Project, as being presented in the EIS. An Amendment Report (Umwelt, 2023) has been prepared to assess the proposed amendments and identify additional or new management and mitigation measures for the Project. This Submissions Report should be read in conjunction with the Amendment Report.



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Indicative Proposed Central West Orana REZ Transmission Corridor
- Indicative Central-West Orana Renewable Energy Zone
- Access Point
- Local Government Area Boundary
- State Forest
- National Parks (NPWS Estate)
- Road
- Drainage Line
- Railway Line

FIGURE 1.1

Location and Regional Setting

Image Source: Data source: DSFI (2022), RES (2023)

Following receipt of the Submissions Report and Amendment Report, DPHI will complete its assessment of the Project and prepare an assessment report, taking into consideration the EIS, the submissions made on the EIS, this Submissions Report, proposed Project amendments and the Amendment Report including the associated updated assessments. DPHI will then provide a recommendation with a formal referral to the Independent Planning Commission (IPC) for determination. The IPC will be the consent authority for the Project.

1.1 The Project as Presented in the EIS

The Project, as presented in the EIS, is proposed to include the construction, operation and decommissioning of a 500 MW solar farm, 200 MW/400 MWh BESS and associated infrastructure (such as operations and maintenance buildings, temporary construction compound, security fencing), civil works (such as intersection works on the Castlereagh Highway, some vegetation clearing and drainage line crossings) and electrical infrastructure (including a new onsite substation and a new overhead transmission line) required to connect to the electricity transmission network. No subdivision of land is proposed as part of the Project. The Project's conceptual layout is provided in **Figure 1.2** with the proposed alignment of the transmission line corridor shown on **Figure 1.3**.

An overview of the Project as presented in the EIS, listing details of the proposed development for which approval is sought, is presented in **Table 1.1**.

Table 1.1 Overview of the Project, as presented in the EIS (Umwelt, 2022)

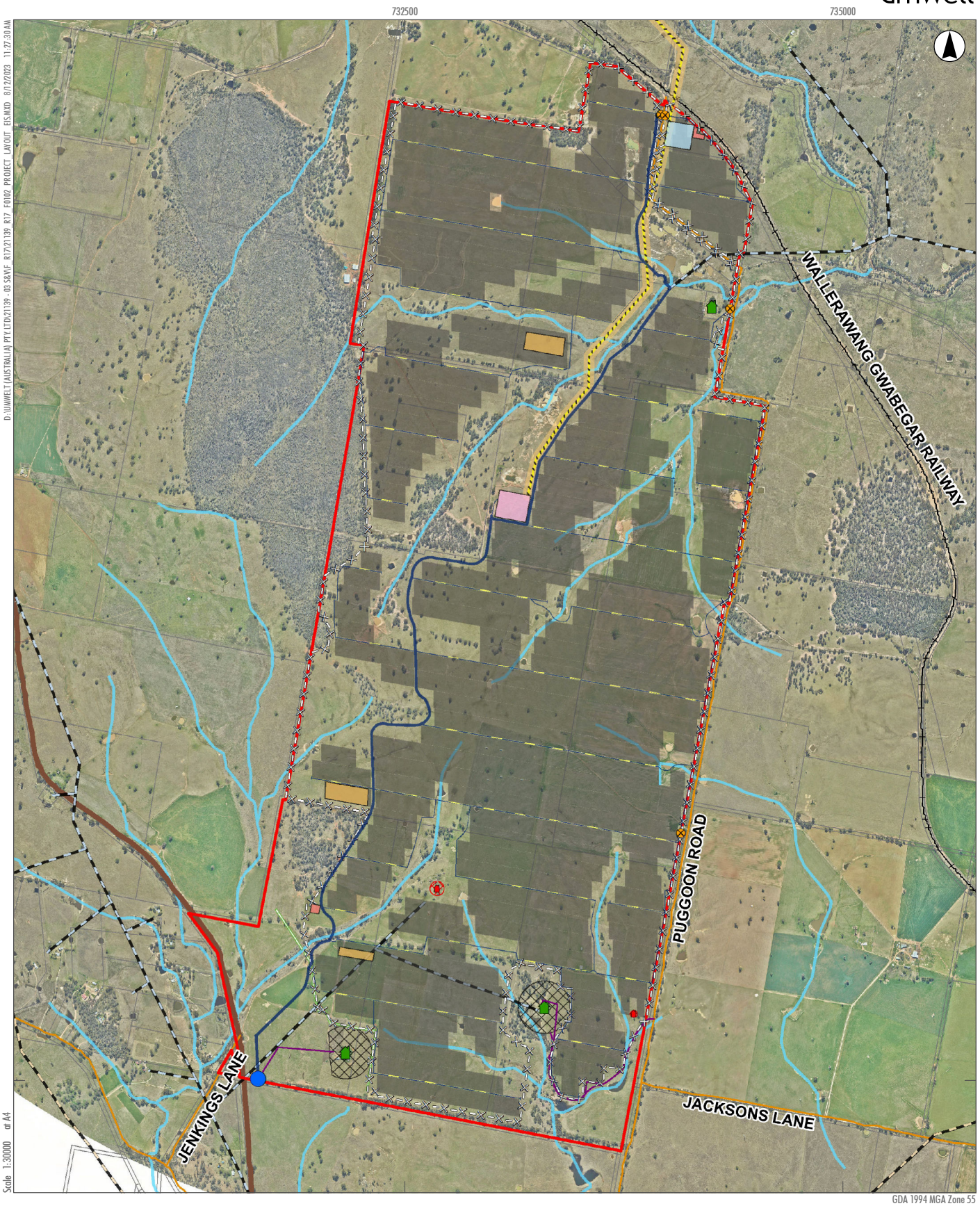
Key element	Description
Capacity	Approximately 500 MW (DC) (650 AC equivalent)
Project area footprint	Approximately 1,370 ha, comprising: • the solar farm and BESS development area, covering approximately 1,300 ha (referred to as the solar farm site) • transmission line corridor for the new overhead transmission line connecting the Project to the grid covering approximately 70 ha (referred to as the transmission line corridor).
Development footprint	Approximately 866 ha
Solar array	• Panels – approximately 1,136,400 bifacial photovoltaic (PV) modules in 2P configuration. • Area – approximately 2.5 m^2 per panel. • Row spacing – up to 12 m. • Maximum height – 5 m at full tilt.
Substation	• Onsite 330 kV substation and switchyard proposed at two possible locations i.e. a northern and central location as shown on **Figure 1.2**. • Area – approximately 3 ha. • Maximum height – 3.5 m with ancillary components not greater than 10 m.
Battery Energy Storage System (BESS)	• Capacity – approximately 200 MW/400 MW-h (DC-coupled). • Configuration – 93 power conversion system (PCS) skids distributed throughout the site on hardstand areas adjacent to inverters. • Dimensions – each PCS skid to be approximately 12.2 m long and 2.5 m wide. • Maximum height – 3 .5 m with ancillary components not greater than 10 m.

Key element	Description
Grid connection infrastructure	• A new 330 kV transmission line is proposed to connect the Project to the proposed CWO-REZ Transmission Line via the NSW Government's proposed switching station to be located on the adjacent Barneys Reef Wind Farm project (as shown on **Figure 1.3**). • The new transmission line would be approximately 13 km long with a 60 m corridor. It is anticipated that approximately 32 pylons (constructed of steel) of 35 m high, spaced at a range of 350 m to 480 m, and an access track will be required, all of which will be contained within the transmission line corridor (**Figure 1.3**).
Project access	• Access will be via road from the Port of Newcastle, the Golden Highway and then the Castlereagh Highway to the Project Area. • Project access will be via the Castlereagh Highway at a newly proposed access point from a local gravel road directly south of the Project Area, refer to **Figure 1.2**.
Parking and security fence	• Location of construction carparking – within the temporary laydown areas, as illustrated on **Figure 1.2**. • Location of operation carparking – within Operation and Maintenance (O&M) facilities, as illustrated on **Figure 1.2**. • Security fence – chain mesh fence of approximately 2.3 m high, subject to final design.
Internal access tracks	• Approximately 6 m wide, consisting of compacted gravel, as shown on **Figure 1.2**.
Temporary ancillary facilities	• Location – proposed compacted gravel areas within the development footprint, near the Project access for ease of accessibility, as shown on **Figure 1.2**. • Facilities to consist of site compound including storage area, offices and meeting room, ablution facilities, canteen and car parking, as well as laydown areas involving areas suitable for storing plant and equipment, and deliveries including solar panels and cable drums, and areas to support waste management activities (e.g. cardboard and timber).
Water use and supply	• Construction - Water to be primarily used during establishment of hard-standing areas (linking to compaction requirements) and dust suppression. Estimated water use would be approximately 206 ML for the construction period. • Operation - Approximately 3.4 ML per year to be required for ongoing maintenance activities such as washing of the PV solar panels, amenities and potable purposes by operational staff as well as for livestock grazing within the solar farm and BESS development area.

Construction hours	• Typical standard construction i.e.:
	  ○ 7 am to 6 pm Monday to Friday
	  ○ 8 am to 1 pm on Saturdays
	  ○ No works on Sunday or public holidays.
	• RES is seeking approval to undertake some activities outside of these hours i.e.: which are inaudible at non-associated residences, emergency work, and deliveries and dispatches where requires by authorities for safety reasons.

Construction timing	Approximately 34 months (Q3 2024).
Workforce	• Construction - Approximately 270 direct full time equivalent (FTE) and 430 indirect FTE jobs (Ethos Urban, 2022). At the Project's peak construction (for up to 6 months) this is expected to increase to about 580 direct FTE jobs (Ethos Urban, 2022). • Operation - Up to 7 direct FTE and 20 indirect FTE jobs.

Key element	Description
Commencement of operations	Anticipated mid-2027
Operation and Maintenance (O&M) facilities	• Location – along the main internal access road as shown on **Figure 1.2**, for ease of accessibility and subject to final design. • Facilities to include an onsite control building (containing control room and veranda/recreation area) of appropriately 100 m^2, a staff office, meeting room facilities, amenities (canteen and ablution facilities) and carparking area.
Operation period lifespan	Approximately 35 years (Q1 2026)
Decommissioning	• The Project would either be upgraded (pending any additional approval requirements) or decommissioned. • Decommissioning would involve removing project infrastructure and returning the development footprint to its pre-existing land use, or another land use in consultation with the landholders, as far as practicable. • As agreed with the landholder some infrastructure may be retained (e.g. access tracks) where beneficial to the agreed land use. • RES or its contractors will seek to recycle all dismantled and decommissioned infrastructure and equipment, where feasible and practicable. Structures and equipment that cannot be recycled would be disposed of at an approved waste management facility in accordance with all statutory requirements.
Capital investment	Approximately $743 million



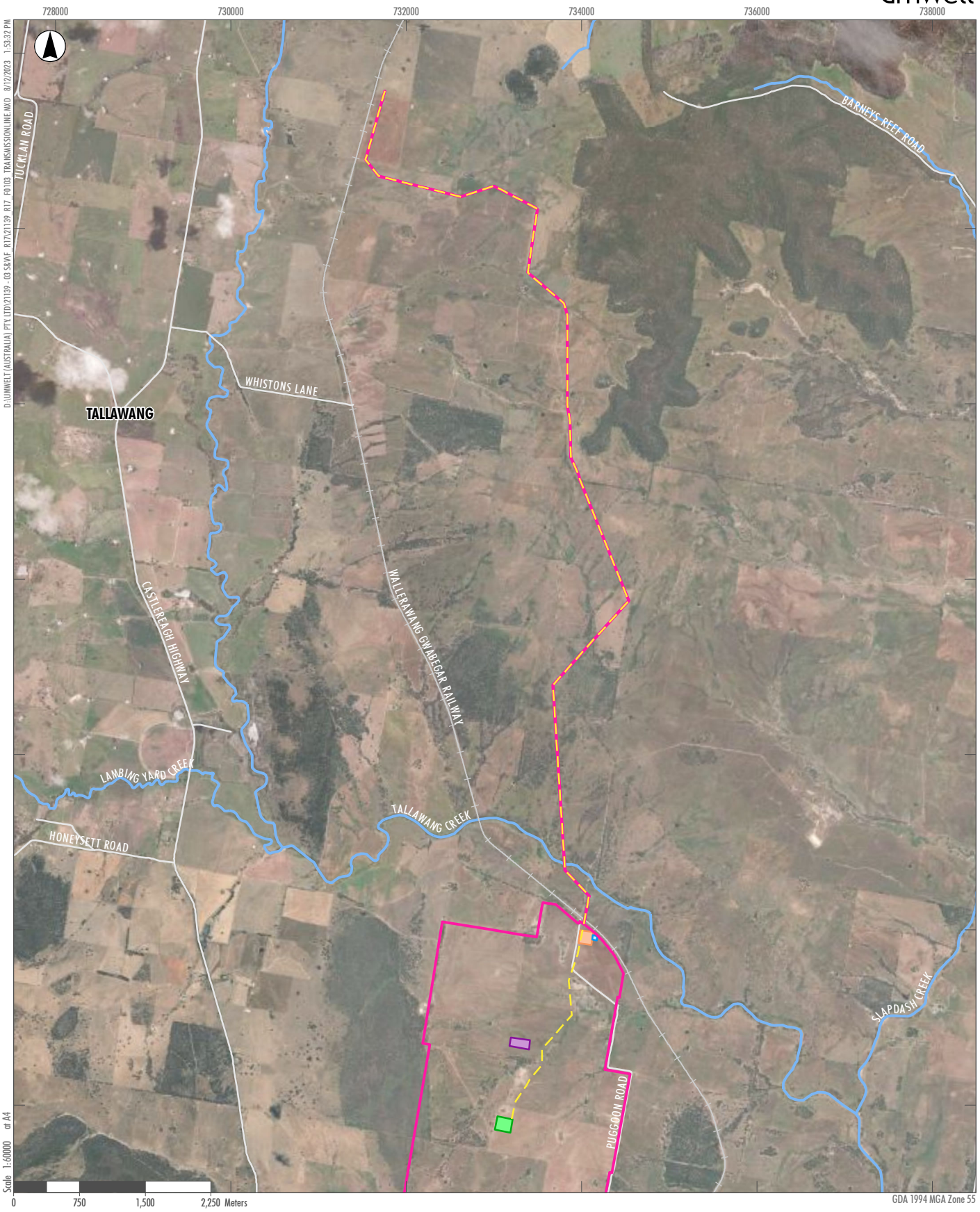
Legend

- Primary Project Access
- Secondary Access
- Proposed Single Axis Tracker
- Bess and DC-DC Coupled PCs with Hardstanding
- Proposed Access Track
- Proposed O&M Facility
- Proposed Substation Central
- Proposed Substation North
- Temporary Construction Compound & Laydown
- Proposed Landowner Access Track
- Proposed Transmission Line
- Proposed Transmission Line Buffer, 30m
- Proposed Landscaping Area
- Involved Dwelling
- Dwelling Exclusion Zone
- Cultural Heritage Huts
- Cultural Heritage Huts Exclusion Zone
- Water Course
- State Road
- Local Road
- 22kV Distribution Line (To Be Rerouted Where Necessary)
- Security Fence
- Project Area Boundary
- NSW Cadastre (2021-11-02)

FIGURE 1.2

The Project, as presented in the EIS

Image Source: RES (2021)



Legend

- Tallawang Solar Farm Project Area
- Proposed HV Powerline
- Road
- Railway
- Watercourse

Site Infrastructure

- Construction Compound/Laydown
- O&M Facility
- Proposed Substation (Central Option)
- Proposed Substation (Northern Option)

FIGURE 1.3

Indicative Transmission Line Alignment, as presented in the EIS

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

1.2 Proposed Amendments

Following the receipt of submissions on the EIS, RES has continued to consult with government agencies, landholders and the community more broadly. Consideration of submissions received and ongoing consultation has led to several Project amendments, as summarised in **Section 3.1**.

An Amendment Report (Umwelt, 2023) has been prepared separately to this Submissions Report and provides an updated project description, revised assessment of impacts supported by relevant updated technical reports and an updated summary of management and mitigation measures. This Submissions Report should be read in conjunction with the Amendment Report.

1.3 Structure of this Report

In accordance with the Submissions Report Guideline (DPE, 2022), this report is structured as follows:

- **Section 1.0** – provides a brief summary of the Project to provide context for the submissions.
- **Section 2.0** – provides an analysis of the issues and themes raised in the submissions.
- **Section 3.0** – summarises the actions taken since the exhibition.
- **Section 4.0** – provides a detailed response to the issues raised in the agency submissions.
- **Section 5.0** – provides a detailed response to the issues raised in the community and organisation submissions.
- **Section 6.0** – provides an updated justification and evaluation of the merits of the Project.
- Section **7.0** – references.
- Appendices:
    - Submissions Register (**Appendix 1**).

2.0 Analysis of Submissions

2.1 Breakdown of Submissions

The EIS was placed on public exhibition from 28 October to 24 November 2022. During the public exhibition period 70 submissions were made on the Project, comprised of 16 government agency submissions and 54 community / organisation submissions. **Table 2.1** provides a breakdown of the submissions received for the Project. **Appendix 1** provides the Register of Submitters.

Table 2.1 Breakdown of Submissions Received

Category	Number of Submissions
State government departments / Agencies	14
Local Council	2
Organisations	2
Community members	52
Total	**70**

2.1.1 Agency Submissions

As outlined in **Table 2.1**, 14 state government departments / agency submissions and two local council submissions were received. Agencies that lodged a submission are as follows:

- ARTC
- Biodiversity Conservation, and Science Directorate (BCS)
- Crown Lands
- Department of Planning and Environment (DPE) Water
- DPE Hazards
- Department of Primary Industries (DPI) Agriculture
- DPI Fisheries
- Department of Regional NSW – Mining, Exploration & Geoscience (MEG) – Geological Survey of NSW (GSNSW)
- Environmental Protection Agency (EPA)
- Fire and Rescue NSW
- Heritage NSW
- Rural Fire Service (RFS)
- Transport for NSW
- TransGrid
- Mid Western Regional Council
- Warrumbungle Shire Council.

Mid Western Regional Council and Warrumbungle Shire Council objected to the Project. Transport for NSW did not object or support the Project, rather they noted that the Project as it was presented in the EIS, is not supported. The other agencies provided comment on the Project (i.e. did not support or object) with some agencies seeking further clarification regarding aspects of the assessment of the Project.
These submissions are further detailed and addressed in **Section 4.0**.

2.1.2 Community and Organisation Submissions

Community and organisation submissions were analysed based on proximity to the Project Area.
The categories include:

- **local area** – within 5 km from the Project Area
- **regional area** – between 5 and 100 km from the Project Area
- **broader area** – more than 100 km away from the Project Area.

Table 2.2 provides a breakdown of the analysis of the community and organisation submissions, including the origin of the submitters who expressed support or opposition to the Project.

Table 2.2 Analysis of Community and Organisations Submissions

LGA	Location	Submitter Type	Support	Object	Total	Support %	Object %
Mid-Western Regional LGA	Local (<5 km)	**Beryl 2852**	**0**	**7**	**7**	0%	13%
		Community	0	7	7		
		Organisation	0	0	0		
Mid-Western Regional LGA	Local (<5 km)	**Tallawang 2852**	**0**	**2**	**2**	0%	4%
		Community	0	2	2		
		Organisation	0	0	0		
Mid-Western Regional LGA	Regional (5–100 km)	**Gulgong 2852**	**0**	**12**	**12**	0%	22%
		Community	0	11	11		
		Organisation	0	1	1		
Mid-Western Regional LGA	Regional (5–100 km)	**Birriwa 2844**	**0**	**3**	**3**	0%	5%
		Community	0	3	3		
		Organisation	0	0	0		
Mid-Western Regional LGA	Regional (5–100 km)	**Mebul 2852**	**0**	**1**	**1**	0%	2%
		Community	0	1	1		
		Organisation	0	0	0		
Mid-Western Regional LGA	Regional (5–100 km)	**Merotherie 2852**	**0**	**1**	**1**	0%	2%
		Community	0	1	1		
		Organisation	0	0	0		
Mid-Western Regional LGA	Regional (5–100 km)	**Kandos 2848**	**0**	**1**	**1**	0%	2%
		Community	0	0	0		
		Organisation	0	1	1		
N/A	**N/A**	**Subtotal**	**0**	**27**	**27**	**0%**	**50%**
Other NSW LGAs	Not applicable	Not applicable	**1**	**23**	**24**	2%	42%
Community			1	23	24		
Organisation			0	0	0		
Interstate	Not applicable	Not applicable	**1**	**2**	**3**	2%	4%
Community			1	2	3		
Organisation			0	0	0		
N/A	**N/A**	**Subtotal**	**2**	**26**	**28**	**4%**	**46%**
N/A	**N/A**	**Total**	**2**	**52**	**54**	**4%**	**96%**

In summary, **Table 2.2** shows that:

- 96 % of the submitters objected to the Project. Of these:
    - 50% were from the Mid-Western Council LGA, with 17 % being from the local area (< 5 km away) and 33% being from the regional area (5–100 km away)
    - 42 % were from other NSW LGA's with the remaining 4 % from other states (i.e. Queensland and Victoria).
- 4% of the submitters expressed support to the Project. Of these:
    - 2% were from other NSW LGAs
    - 2% were from interstate.

While there were significant similarities in a number of submissions, with some content using the same wording at times, no submissions were considered to be form letters due to minor differences. These submissions have been conservatively considered in the analysis as unique submissions and are identified in **Appendix 1**.

Submissions received from the community and organisations are further detailed and addressed in **Section 5.0**.

2.2 Categorisation of Matters Raised in Submissions

A content analysis was undertaken on all community submissions to understand and categorise the key issues raised by the community in relation to the Project. Objections and supporting submissions were analysed separately, as the themes within the submissions were distinct.

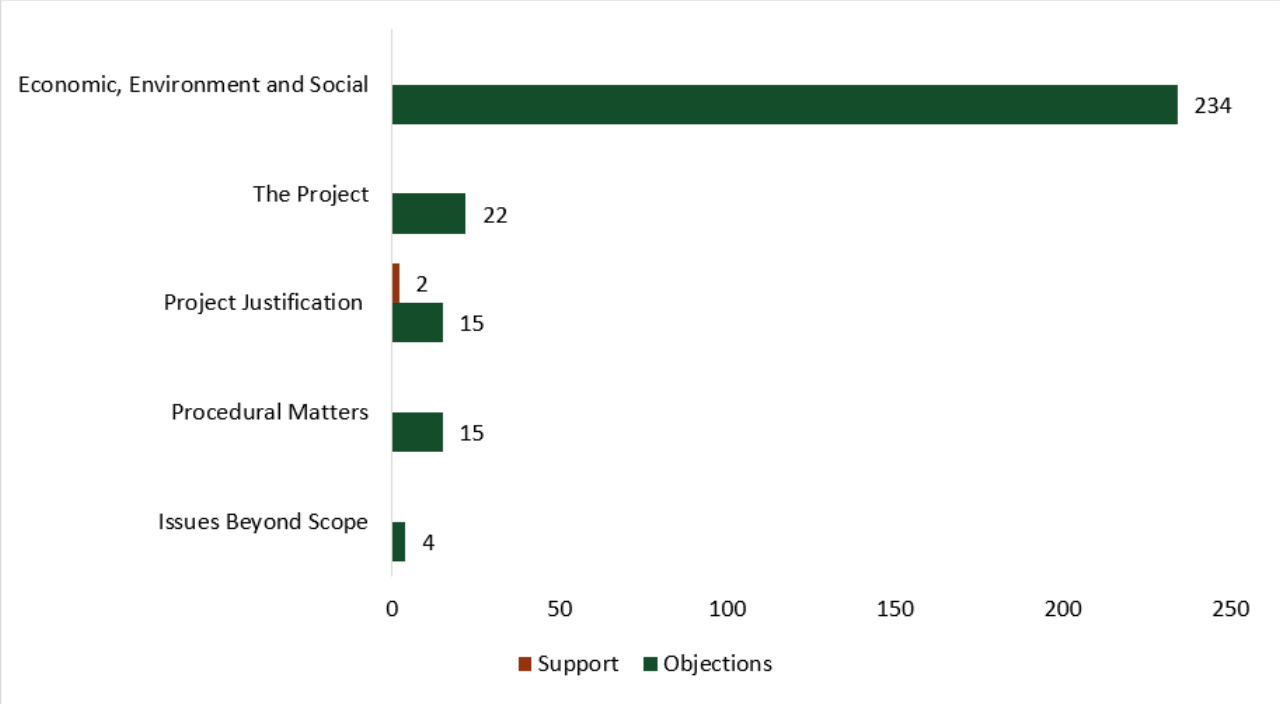
In accordance with the Submissions Report Guideline (DPE, 2022), issues have been categorised into the following themes:

- economic, environmental and social impacts of the Project (e.g. agriculture, noise, traffic and transport, microclimate, visual, glint and glare, socio-economic impacts, heritage, biodiversity, surface water, climate change, waste management, hazards and risks, rehabilitation and cumulative impacts)
- the Project (e.g. specific to the project design and site location)
- procedural matters (e.g. the approvals and assessment processes as well as the level or quality of engagement)
- the justification and evaluation of the Project as a whole (e.g. consistency of project with Government plans, policies or guidelines)
- issues beyond the scope of the project or not relevant to the Project (e.g. broader policy issues).

These themes were then divided into sub-themes to provide greater definition of the issues raised. Further details of the categorisation of issues are provided in the following sections.

2.2.1 Objecting Submissions

Economic, environmental and social impacts of the Project (n=234) were the most frequently raised theme in the 52 objecting submissions (refer to **Graph 2.1**). Issues specific to the Project design and location (n=22) and Project justification and Procedural matters (n=15) were the next most frequently raised theme, with issues beyond the scope of the Project (n=4) the least frequently raised theme. It should be noted that many submissions raised multiple issues within each of the theme groups. Furthermore, two submissions raised their support for the Project as it will assist with the transition to renewable energy generation.
A breakdown of the themes within the objecting submissions is provided in **Graph 2.1**.



Graph 2.1 Categorisation of Objecting Submissions

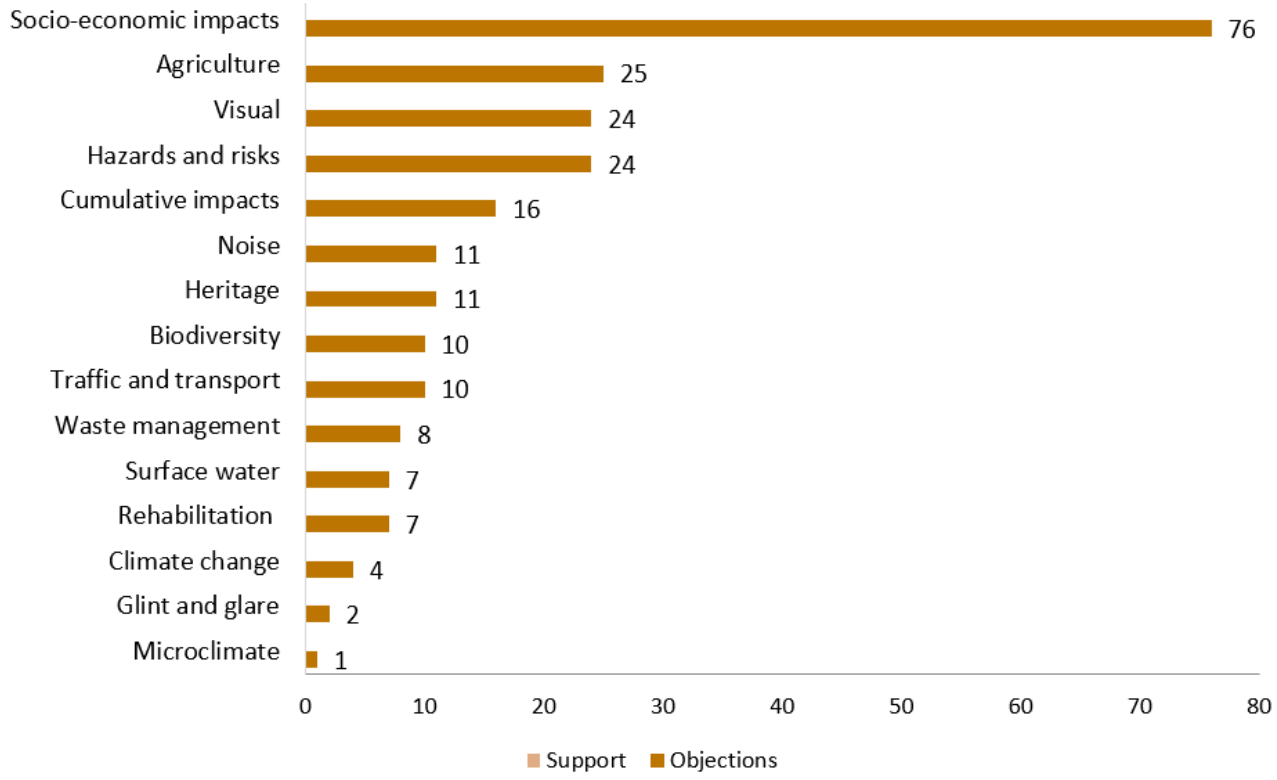
2.2.1.1 Economic, Environmental and Social

There were 15 sub-themes to the economic, environmental and social theme raised in the objecting submissions. These are:

- agriculture (28 submissions) noise (7 submissions)
- traffic and transport (10 submissions)
- microclimate (one submission)
- visual (24 submissions)
- glint and glare (two submissions)
- socio-economic impacts (32 submissions)
- heritage, including Historical heritage (10 submissions) and Aboriginal heritage (one submission)

- biodiversity (10 submissions)
- waste management (7 submissions)
- surface water (7 submissions)
- greenhouse gas emissions (4 submissions)
- hazards and risks (24 submissions)
- rehabilitation and rehabilitation (7 submissions)
- cumulative impacts (16 submissions).

The most frequently raised sub-theme was socio-economic impacts (n=76) (refer to **Graph 2.2**) with key concerns relating to property values, tourism impacts, mental health, accommodation impacts, local employment and the influx of the workforce to the local community. Agriculture impacts were the second most frequently raised sub-theme (n=25), followed by visual amenity and Hazard and Risks (n=24) (refer to **Graph 2.2**). Responses to objections raised in relation to the Project are addressed in **Section 5.0**.



Graph 2.2 Economic, Environmental and Social Theme

2.2.1.2 The Project

The key sub-theme raised in relation to the Project (n=22) was commentary regarding the materials used for the Project that are not manufactured locally (n=7) and the location of the site (n = 6). A total of three objecting submissions from the community and organisations raised concerns relating to the scale of the Project. Responses to objections raised in relation to the Project are addressed in **Section 5.2**.

2.2.1.3 Justification and Evaluation of the Project

There were 15 submissions that raised concerns about the merits of the Project, with 5 submissions raising concern around the reliability of solar energy generation. Another 4 submissions advocated for alternative sources of electricity generation and storage, with a further 4 advocating that electricity should be generated where it is used. Responses to objections raised in relation to the justification and evaluation of the Project are addressed in **Section 5.3**.

2.2.1.4 Procedural Matters

The key sub-theme raised in relation to procedural matters (n=15) was the adequacy of assessments and purported inadequate stakeholder consultation. Responses to objections raised in relation to procedural matters are addressed in **Section 5.4**.

2.2.1.5 Beyond the scope of the Project

There were four submissions that raised concerns beyond the scope of the Project, with two of these objecting based on the recent experience at the Beryl Solar Farm and Suntop Solar Farm and two submissions raising concerns regarding the NSW Government's transparency regarding green energy and infrastructure. Responses to objections raised beyond the scope of the Project are addressed in **Section 5.5**.

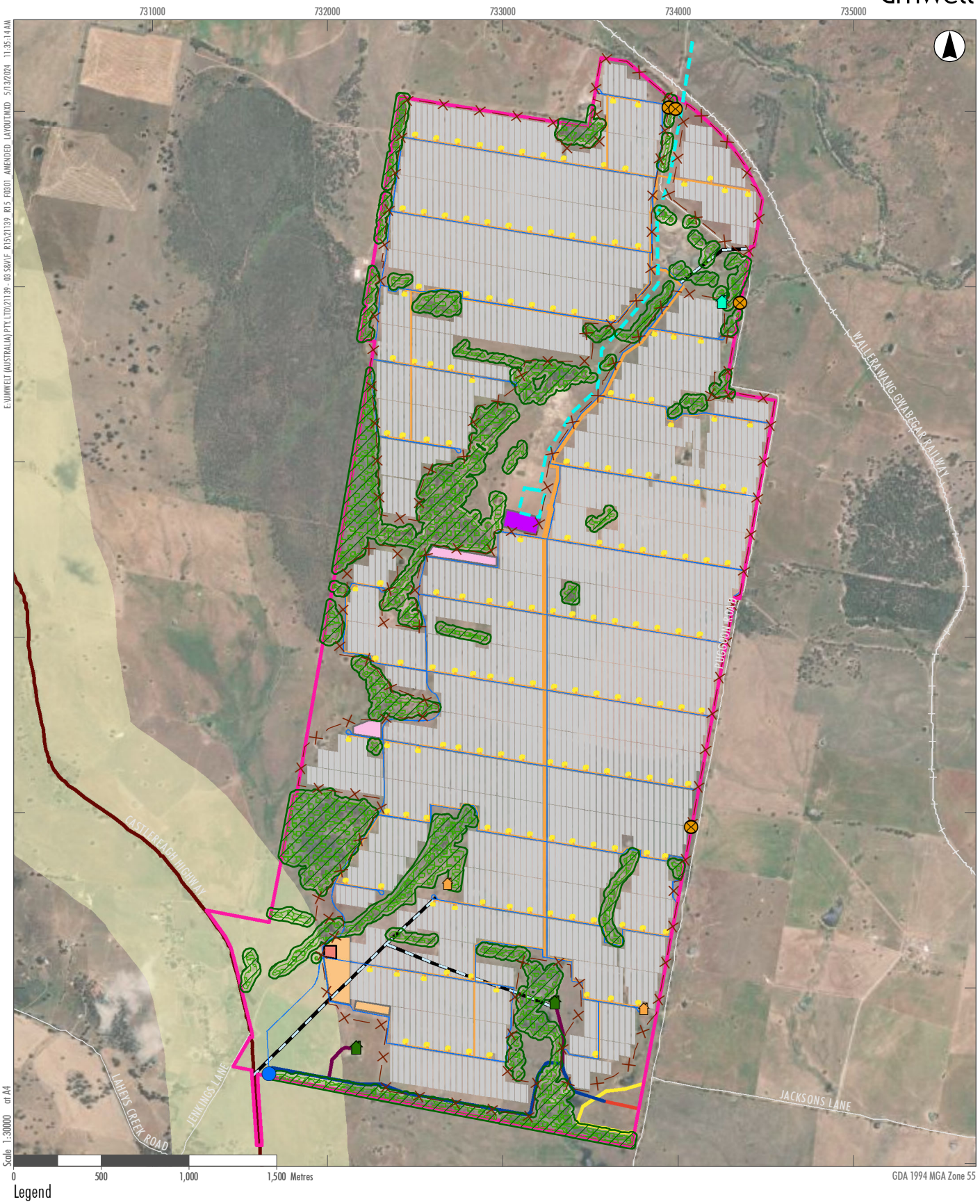
3.0 Actions Taken Since Exhibition

3.1 Project Amendments

Design amendments have been made to the Project, as presented in the EIS, in response to submissions received during the exhibition period and ongoing consultation with agencies, landholders and stakeholders more broadly. These include:

- Inclusion of a 400-person Temporary Workers Accommodation (TWA) facility within the Project Area.
- Updated treatment for the proposed intersection upgrade at the newly proposed Project access on the Castlereagh Highway.
- Removal of the proposed 13 km overhead transmission line traversing through the Barneys Reef Wind Farm as this is now included in EnergyCo's CWO_REZ Transmission Project.
- Increased BESS capacity from 200 MW/400 MW-h to 500 MW/1000 MW-h.
- Minor layout refinements, including:
    - removal of the northern substation option
    - installation of additional solar panels (covering a further 1.61 ha) within already disturbed areas
    - inclusion of dedicated TWA access track through the solar farm site
    - realignment of the security fence line to improve wildlife connectivity by allowing for east-west thoroughfare.
- Minor readjustment of the Project Area boundary and development footprint due to above amendments, as illustrated on **Figure 3.1**.

A revised conceptual layout, illustrating the Amended Project, is provided on **Figure 3.1**. A detailed description and assessment of the Amended Project are provided in **Section 3.0** and **Section 6.0** respectively. A detailed description and assessment of the project amendments are provided in Section 3 and Section 6 of the Amendment Report (Umwelt, 2023).



Legend

- Project Area Boundary
- Proposed Single Axis Tracker
- Temporary Workers Accommodation (TWA)
- BESS and DC-DC Coupled PCS with Hardstanding
- Proposed Medium Voltage Reticulation
- Proposed Access
- Construction Compound
- Temporary Laydown
- Proposed O&M Facility
- Proposed Substation
- Grid Connection Infrastructure (proposed by EnergyCo)
- Primary Project Access
- Secondary Access
- Security Fence
- Proposed Landowner Access Track
- Temporary Workers Accommodation (TWA) Access
- Proposed Post Construction Landowner Access Track
- Involved Dwelling
- Involved, Unoccupied Dwelling
- Native vegetation (Umwelt)
- Native Vegetation Buffer, 20m
- Local Road
- State Road
- State Road (Highway) Buffer 500m
- 22kV Distribution Line (to be rerouted where necessary)

FIGURE 3.1

Amended Project Layout

Image Source: ESRI Basemap Data source: NSW DFSI (2022), RES (2024)

3.2 Further Assessment

As a result of the above project amendments, further assessment work has been completed in relation to the following:

- Concept layout for the TWA facility as well as updated concept drawings and swept path analysis for the primary access point (refer to Appendix 4 of the Amendment Report).
- Accommodation and Employment Strategy (refer to Appendix 5 of the Amendment Report).
- Biodiversity (refer to Appendix 6 of the Amendment Report).
- Aboriginal Cultural Heritage (refer to Appendix 7 of the Amendment Report).
- Historical Heritage (refer to Appendix 8 of the Amendment Report).
- Landscape and Visual (refer to Appendix 9 of the Amendment Report).
- Noise and Vibration (refer to Appendix 10 of the Amendment Report).
- Traffic and Transport (refer to Appendix 11 of the Amendment Report).
- Water Resources (refer to Appendix 12 of the Amendment Report).
- Preliminary Hazard Analysis (refer to Appendix 13 of the Amendment Report).
- Bushfire (refer to Appendix 14 of the Amendment Report).
- Social (refer to Appendix 15 of the Amendment Report).
- Economic (refer to Appendix 16 of the Amendment Report).
- Draft Social and Environmental Sustainability Plan (refer to Appendix 17 of the Amendment Report).
- Updated Cumulative Impact Assessment (refer to Appendix 18 of the Amendment Report).

3.3 Consultation

During the preparation of the Submissions Report, RES has sought to consult with several government agencies, landholders and the broader community to resolve any matters raised in the submissions, and where appropriate, confirm project amendments and additional management and mitigation measures. Details of the ongoing consultation following the EIS exhibition are provided in Section 5 of the Amendment Report.

4.0 Response to Agency Submissions

Government agencies make submissions relating to their areas of responsibility and typically relate to technical matters as well as matters the agency considers require consideration by the consent authority or to be addressed by conditions should development consent be granted.

As noted in **Section 2.1.1**, submissions were received from a total of 16 government agencies. These submissions have been responded to in **Section 4.1** to **Section 4.15**.

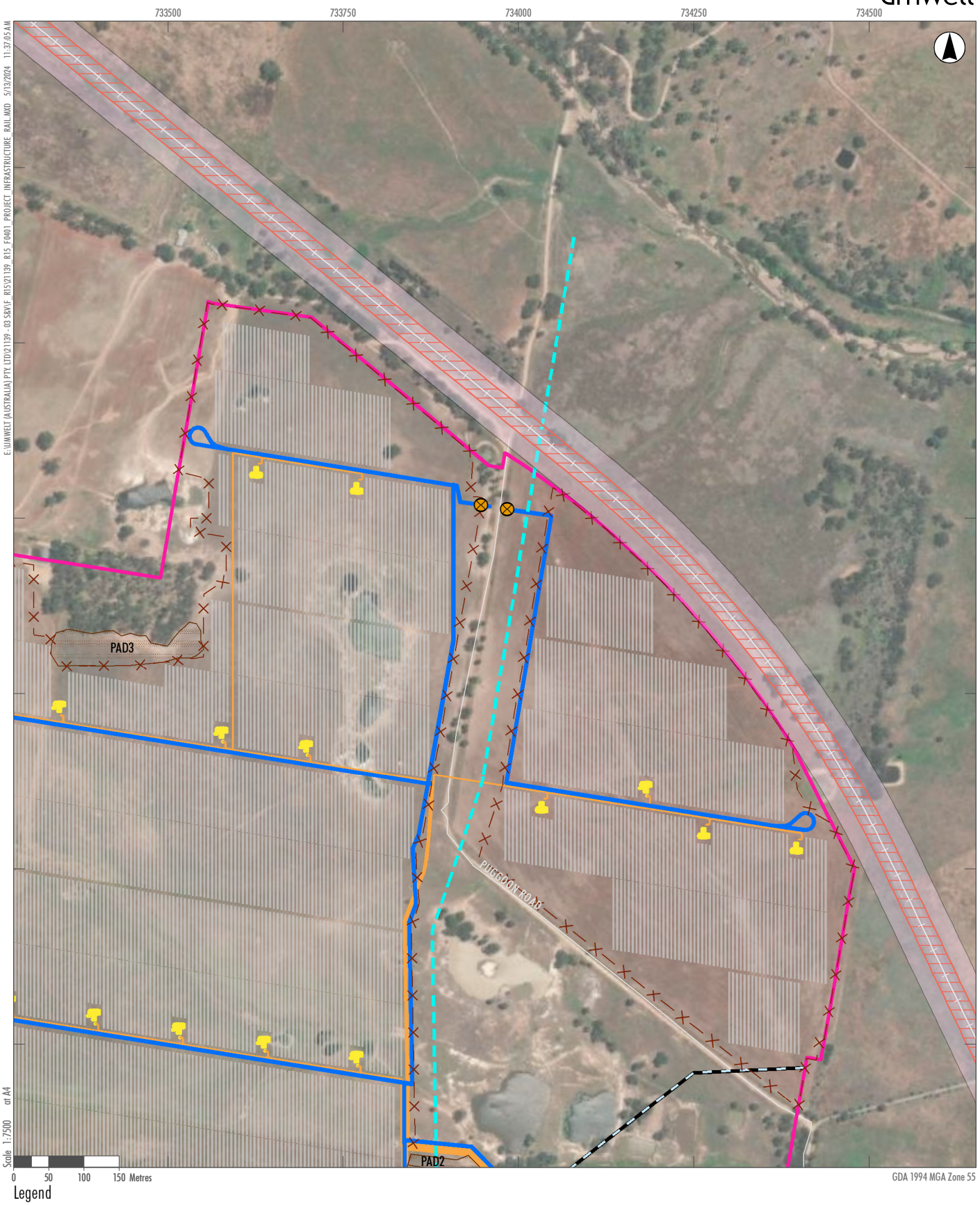
The following section responds to the specific matters raised by each agency submission. The issues raised in the agency submissions are identified in the following sections in text boxes, with a response provided following each text box.

4.1 ARTC

Impacts to rail infrastructure
I advise that Australian Rail Track Corporation (ARTC) has no objections to the proposed Development, however ARTC requests that due to the nearby rail corridor, Department of Planning considers the following in its assessment of the application; • *The impact this development will have on the level crossings.* • *The installation of aerial power lines are completed in accordance with ARTC requirements.* • *Due to the proposed development being within 25 m of the rail corridor, ARTC requests a greater understanding of all works adjacent to ARTC land.* • *The proponent will be required to seek ARTC concurrence to carry out any works within 25 m of the rail corridor, including installation of powerlines, excavation and any other adjacent earthworks as it has the potential to impact on the safety and operation of the rail network.* *Department of Planning should consider the State Environmental Planning Policy (SEPP) (Infrastructure) 2007 and Development Near Rail Corridors and Busy Roads – Interim Guideline, published in the NSW Government Gazette No.158 on 19 December 2008 when determining this application.*

The EIS identified that the Project would require access over two railway level crossings along the Wallerawang Gwabegar Railway line (maintained by ARTC). However, amendments to the Project (as mentioned in **Section 3.1** and detailed in Section 3 of the Amendment Report) have removed the overhead transmission line from the Project as this is now the responsibility of the electricity network operator i.e. EnergyCo. As a result, the Amended Project no longer requires access over the rail corridor.

There is a section along the north-east boundary of the Amended Project Area that borders the Wallerawang Gwabegar Railway line, as illustrated on **Figure 4.1**. No Project infrastructure is proposed within 25 m of the rail corridor.



Legend

- Project Area Boundary
- Proposed Single Axis Tracker
- BESS and DC-DC Coupled PCS with Hardstanding
- Proposed MV Reticulation
- Proposed Access
- Grid Connection Infrastructure
- Secondary Access
- Security Fence
- Cultural Heritage Area (Umwelt)
- 22kV Distribution Line (to be rerouted where necessary)
- Railway Corridor
- 25m Railway Corridor Buffer
- Railway
- Local Road

FIGURE 4.1

Project infrastructure within 25m from the rail corridor

Image Source: ESRI Basemap Data source: NSW DFSI (2022), RES (2024)

4.2 Biodiversity, Conservation and Science Directorate (BCS)

Avoidance of SAII impacts through project design
BCS has reviewed the Environmental Impact Statement and notes that the project will result in impacts to the Critically Endangered Ecological Community (CEEC) Box Gum Woodland, which is a candidate Serious and Irreversible Impact (SAII) entity, this includes: • *10.96 ha of Box Gum Woodlands; and* • *17.11 ha of Box Gum Derived Native Grasslands.* *It should be noted that, based on the design of the project, BCS considers that the proponent has taken reasonable steps when locating the solar farm arrays to avoid higher biodiversity value representations of this SAII entity within the project area.*

Comment from BCS is noted. As discussed in **Section 3.1,** several amendments are proposed to the Project Area boundary and development footprint that were presented in the EIS. The Amended Project Area and Development Footprint is shown on **Figure 3.1**. Changes to the Development Footprint involved:

- removal of proposed overhead electricity transmission line corridor
- incorporating a section of the Castlereagh Highway and associated road reserve into the Project Area to accommodate the proposed intersection upgrade
- internal readjustment of the development footprint due to additional 1.61 ha rows of solar arrays to optimise the solar capacity within already disturbed areas
- inclusion of dedicated TWA access through the solar farm site.

As a result, additional areas that were not assessed or fully covered in the BDAR for the exhibited Project were identified. Additional surveys were undertaken during September 2023 to assess the biodiversity values of these areas. An Amended Biodiversity Development Assessment Report (BDAR) has been prepared by Umwelt to assess the revised biodiversity impacts associated with the Amended Project and to address the comments received from BCD on the exhibited BDAR. The Amended BDAR is provided in Appendix 6 of the Amendment Report.

Where possible the original avoidance strategy has been retained by strategically locating the Amended Development Footprint on Category 1 - exempt Land.

When compared to the EIS Project, the Amended Project will result in the following biodiversity impacts:

- Direct impacts to PCTs and native vegetation: reduced from 30.93 ha to 7.5 ha.
- Direct impacts to TECs: reduced from 29.9 ha to 5.53 ha.

The Amended BDAR found that overall, the Amended Project has resulted in the avoidance of direct impacts on approximately 107 ha of remnant woodland and derived native grassland which equates to 93.44% of remnant woodland and derived native grassland being retained within the Amended Project Area.

The BAM-C and BDAR should be submitted to consent authority within 14 days of certifying the BDAR	***Recommendations***
In accordance with section 6.15(1) of the Biodiversity Conservation Act 2016, 'a biodiversity assessment report cannot be submitted in connection with a relevant application unless the accredited person certifies in the report that the report has been prepared on the basis of the requirements of (and information provided under) the biodiversity assessment method as at a specified date and that date is within 14 days of the date the report is so submitted.' To meet this requirement a BDAR must be certified, for instance by signing and dating the first page, within 14 days of the relevant submission date of the EIS. In addition, the date of submission of the BDAR must be within 14 days of the date shown on the relevant finalised credit report generated using the BAM-C. The BDAR for the project was certified 7 July 2022 and the BAM-C generated credit report is dated 8 August 2022, whilst the EIS was exhibited on 28 October 2022. All of the above need to be certified and finalised within 14 days of submission of the EIS.	*1.1 Re-certify the BDAR within 14 days of its submission date, during the Response to Submissions.* *1.2 Provide a BAM calculator credit report which has been finalised within 14 days of the certification of the BDAR.*

Further consultation with BCS have been undertaken since the exhibition of the EIS by way of a meeting to discuss their submission. This is further detailed in Section 5 of the Amendment Report. At the meeting, it was discussed that the Project was being refined and that proposed Project amendments will be considered and assessed in detail in an Amended Biodiversity Development Assessment Report (BDAR). The Amended BDAR is provided in Appendix 6 of the Amendment Report.

It is noted that the Amended BDAR will be re-certified within 14 of its submission date, and a BAM calculator (BAM-C) credit report will be finalised within 14 days of certification of the BDAR. The BAM-C report will be submitted separately to the NSW Biodiversity Accredited Assessor System (BAAS) with the Amended BDAR.

The BDAR should confirm that all components related to the construction of the project have been accounted for	***Recommendation***

The EIS for the project details the components which will be needed for the construction and operation of the solar farm, this includes:
• *The bushfire requirements for the solar farm (Section 6.13.3.2 of EIS):*
  ○ *a 10 metre (m) Asset Protection Zone (APZ) for structures and associated infrastructure,*
  ○ *a 10 m setback line around the perimeter of the project along the fence line; and*
  ○ *an additional 40 m setback around vegetated areas within the project area.*
• *Access requirements for the solar farm (Section 6.6.2.1 of EIS)*
  ○ *primary access to the project area from the Castlereagh Highway involving a local intersection widening to allow for a three-way intersection,*
  ○ *four alternate access points along Puggoon road to allow additional access for emergency vehicles; and*
  ○ *internal access roads consisting of compacted gravel approximately 6 m wide*
	2.1 Clarify that all project components required for construction and operation of the solar farm have been accounted for in the BDAR.

The BDAR should confirm that all components related to the construction of the project have been accounted for	*Recommendation*
It is unclear, from review of Section 1.1 of the BDAR, if these project components have been accounted for in impact assessments. All development components which will result in loss of biodiversity values, must be accounted for in the development footprint and calculated in the total direct impact required for the project.	

BCD comments have been addressed in the Amended BDAR (refer to Appendix 6 of the Amendment Report) to account for all project components required for the construction and operation of the Amended Project.

The vegetation cover landscape assessment requires review	*Recommendation*
Section 1.3A and 1.3B of the BDAR detail the native vegetation extent within a 1500 m buffer area. *It is noted that the native vegetation within the subject site has not been mapped within these Figures. All native vegetation, inclusive of that present within the subject site should be included within the landscape native vegetation cover assessment. Section 3.2 of the BAM Operational Manual Stage 1 provides clarification and states that mapping requirements for the landscape vegetation cover class assessment must mirror that for the subject site and must be inclusive of all areas of native vegetation, including areas which are ground cover only* *When reviewing the BAM-C for the project, it is noted that a native vegetation cover of 65% has been entered. This is different from what is presented in Table 3.1 of the BDAR (59.4%), potentially this higher figure within the BAM-C may account for the vegetation within the subject site which has not been included in Figures 1.3A and 1.3B.* *Section 3.1.2 of the BAM states that a landscape assessment area should be 1500 m for development site shaped projects or 500 m along a centre line of a linear-shaped project. BCS notes that a 1500 m buffer has been included for both the solar farm (development site shaped) and the transmission line (linear shaped). This may have resulted in an overestimate of vegetation cover.*	*3.1 Review the landscape native vegetation cover assessment to ensure that vegetation within the subject site has been included*

BCS comments have been addressed with an Amended BDAR (refer to Appendix 6 of the Amendment Report), which includes a review and update of the landscape native vegetation cover assessment to ensure that vegetation with the subject site has been included.

Provide further details on conformance with threatened flora survey guidelines	*Recommendation*
Section A.1.2.3 of the BDAR states that, threatened flora targeted surveys were "generally in accordance with the NSW Guide to Surveying Threatened Plants (OEH 2016a)". It should be noted that this guideline was superseded by the document Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method (2020), prior to surveys within the project site occurring. The BDAR should be updated to demonstrate that targeted surveys undertaken conformed to the minimum requirements of the current threatened flora survey guidelines, specifically Tables 1-3 and Section 5.1. *If surveys have been undertaken which do not conform with the minimum requirements referenced above; further survey, assuming presence or an expert report will be required.*	*4.1 Demonstrate that surveys conformed with relevant flora survey guidelines, specifically Tables 1-3 and Section 5.1.*

BCS comments have been addressed with an Amended BDAR (refer to Appendix 6 of the Amendment Report), which demonstrates that targeted surveys undertaken conformed to the minimum requirements of the relevant flora survey guidelines.

Provide justification for the exclusion of species from unsurveyed potential habitat	***Recommendations***
Figure 2.1A–B of the BDAR shows the survey effort that was undertaken during Spring (October), Summer (February) and Winter (June and August). BCS notes that Spring surveys were not undertaken within the southern portion of the transmission line alignment and instead occurred in an area outside of the subject site, in an alternative transmission line alignment (See Figure 1 below). The unsurveyed area contains both derived native grassland and woodland representing PCT 281, totalling approximately 13 hectares cumulatively. *The following candidate species are associated with PCT 281 which have a survey window limited to Spring:* • *Ausfeld's Wattle* • *Gang-gang Cockatoo* • *Pine Donkey Orchid* • *Booroolong Frog* • *Superb Parrot* • *Prasophyllum sp. Wybong* • *Silky Swainson-pea.* *The list above would be inclusive of species which can occur in derived native grassland and/or woodland. From review of the BAM-C, these species have been excluded on the basis of targeted survey across the entire subject site.* *Justification should be provided on the exclusion of the species above from the unsurveyed habitat within the southern portion of the transmission line alignment in accordance with Section 5 of the BAM. If the unsurveyed habitat represents potential habitat for any of the species above a targeted survey to determine the presence or absence of the species', an expert report or assumption of presence will be required.*	*5.1 Provide justification on the exclusion of the candidate species listed in this response from the unsurveyed habitat within the southern portion of the transmission line alignment.* *5.2 If appropriate justification cannot be provided, undertake a targeted survey to determine the presence or absence of the species, prepare an expert report or assume presence.*

As mentioned in **Section 3.1** and discussed in Section 3 of the Amendment Report, the Project as presented in the EIS has been amended and no longer includes the proposed overhead transmission line. As a result, the above comment from BCD is no longer relevant to this application.

Species surveyed outside of the survey season should be justified	*Recommendations*
From review of the BAM-C it is noted that the Brush-tailed Phascogale has been excluded as a candidate species for the project site on the basis of targeted survey. Targeted survey for this species involved deploying a camera array for 15 days in August 2021. The survey window for the Brush-tailed Phascogale is Dec-Jun. No justification has been provided in the BDAR regarding surveying out of season for Brush-tailed Phascogale. The Brush-tailed Phascogale has a semelparous breeding cycle where all mature males of this species will die-off in early winter, reducing the overall population. This has the potential to marginalise the potential detection rate of the species during winter surveys. In addition, from review of the BAM-C, the Booroolong Frog has also been excluded as a candidate species for the project on the basis of targeted survey. According to the BDAR, targeted survey for this species involved spotlighting and call playback undertaken during June and August 2021. This species shelters during the months of winter under rocks in riparian habitat and would be unlikely to respond to call-play back outside of their breeding periods. This has the potential to significantly marginalise the potential detection rate of the species during winter surveys. It is noted that the survey month of October was selected for this species in the BAM-C, it is unclear if this is a transcription error between the BDAR and BAM-C *Further information should be provided to justify that the surveys undertaken for the species above were adequate. If appropriate justification cannot be provided, a targeted survey to determine the presence or absence of the species, an expert report or assumption of presence will be required.*	*6.1 Provide justification that the targeted surveys undertaken for the species detailed in this response were adequate to determine presence/absence.* *6.2 If appropriate justification cannot be provided, undertake a targeted survey to determine the presence or absence of the species, prepare an expert report or assume presence.*

BCS comments have been addressed in the Amended BDAR (refer to Appendix 6 of the Amendment Report), providing justification that the targeted surveys undertaken for the Brush-tailed Phascogale and Booroolong Frog were adequate to determine absence.

Furthermore, it is noted that the Project no longer proposes any direct or indirect impact to Tallawang Creek due to the overhead transmission line being excluded from the application.

Its is unclear why vegetation plots have been completed but not included in the BAM-C	*Recommendations*
Section A.1.2.2 states that, A total of 36 BAM plots were conducted within the Subject Land during the surveys undertaken for this assessment (refer to Figure 2.1), although only a total of eight plots were required to calculate the credit requirement of the Subject Land. *From reviewing the plot data provided in the BAM-C and the field data sheets it has been identified that only a subset of 8 vegetation plots have been included in the BAM-C and provided to BCS. All survey data should be provided when submitting the BDAR for review.* *In addition, it is noted that 3 of the 8 vegetation plots selected for inclusion have been duplicated across the vegetation zones 281_Moderate_solar and 281_Moderate_ETL, these plots are:* • *P21139_013* • *P21139_022* • *P21139_036.*	*7.1 Include all plots in the BAM-C or provide justification in the BDAR as to why they have not been entered.* *7.2 Provide justification as to why discarded plots were not representative of the site and why duplicating plots was more appropriate*

Its is unclear why vegetation plots have been completed but not included in the BAM-C	*Recommendations*
If additional plots have been completed and they are representative of the relevant vegetation zone they should be entered in the BAM-C. If plots have not been used because they are not within the project footprint, or for any other reason, this should be clearly justified in the BDAR for each plot. *Providing the spatial location and data associated with the 36 BAM plots collected on site will likely assist in providing BCS with further context and understanding behind the decision logic used to exclude and include plots.* *Where plots have been duplicated to make up minimum plot numbers, justification must be provided in the BDAR as to why this was the most appropriate method for the zone. Where enough plots exist for a vegetation zone, but plots have been duplicated instead of using all collected plots, adequate justification must be provided as to why the discarded plots were not representative of the site and why duplicating plots was more appropriate. Additionally, adequate justification must be provided for the selection of the plots to be duplicated.*	

BCS comments have been addressed in the Amended BDAR (refer to Appendix 6 of the Amendment Report), which provides further clarification on why vegetation plots completed have not been included in the BAM-C, and why there is a duplication of plots.

The indirect impacts associated with the project are unclear and should be clarified	*Recommendations*
Section 5.1.2 of the BDAR states that "the project is not expected to result in any substantial indirect impacts on the biodiversity values of the adjacent land. One Indirect Impact Zone has been identified within the Subject Land. The indirect impact is related to the construction of a security fence around the solar farm and BESS development area and has been discussed in Section 5.2. The indirect impact zone was assessed using a 5 m buffer off the security fence layout, refer to Figure 4.2." *It is unclear from the BDAR if offsetting of residual indirect impacts is being proposed and, if so, how the buffer of the security fence has been accounted for in the BAM-C. If residual indirect impacts are expected to occur, offsetting of this residual impact should be proposed in accordance with Section 8.6 of the BAM.* *It is also unclear how the indirect impacts associated with the construction of the security fence relate the indirect impact zone displayed in Figure 4.2B of the BDAR. This Figure shows an indirect impact zone across the entire of the subject site (See Figure 2).*	*8.1 Provide further explanation on the indirect impacts associated with the security fence and if any residual indirect impacts are expected to occur* *8.2 If residual indirect impacts are expected to occur, this impact should be offset* *8.3 Provide clarity on the indirect impact zone displayed in Figure 4.2B of the BDAR.*

As mentioned in **Section 3.1**, in response to the above comment from BCS, the site security fence perimeter for the Amended Project has been realigned to improve wildlife connectivity through the site. The revised design removes fencing from around much of the native vegetation to be retained on site and provides an open corridor between the northern and western boundaries (refer to **Figure 3.1**) to minimise the indirect impacts associated with the fence. The Amended BDAR (refer to Appendix 6 of the Amendment Report) provides an updated evaluation of the indirect impacts associated with the security fence and identifies any residual indirect impacts that are expected to occur.

Review of species identification and data entry may be required	*Recommendation*
From review of the floristic data collected in BAM plot surveys Themeda quadrivalis (Grader Grass) was identified in Plot P21139_032 (contributing to 30% cover across the plot). *Detection of this species on the project sites seems unusual, as it is native to typically occurs in tropical and sub number of times within the tropical environments. In NSW it has been detected a small number of times within the NSW NorthCoast Bioregion, (Australian Virtual Herbarium 2022). Potentially this species has been mis-identified from the native species Themeda triandra (Kangaroo Grass) or there has been a transcription error when inputting data.* *BCS recommend that an audit of species identification and data entry is undertaken to identify potential errors. Species identification and data entry is an important factor contributing to the data collected under the BAM, as many key aspects of the assessment are informed by species identification, including:* • *PCT selection and TEC identification* • *vegetation condition mapping* • *compositional and structural scores for plots* • *targeted flora survey.*	*9.1 Audit species identification and data entry outcomes*

The Amended BDAR provide an update on the species identification and data entry outcomes (refer to Appendix 6 of the Amendment Report).

It is the role of the consent authority to determine whether an impact is Serious and Irreversible	*Recommendation*
Section 5.3.1 of the BDAR states: *"An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct if:* • *It will cause a further decline of the species or ecological community that is currently observed, estimated, inferred, or reasonably suspected to be in a rapid rate of decline, or* • *It will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred, or reasonably suspected to have a very small population size, or* • *The impact on the habitat of a species or ecological community that is currently observed, estimated, inferred, or reasonably suspected to have a very limited geographic distribution, or* • *The impact on a species or ecological community that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.* *In relation to the Box-Gum Woodland CEEC, none of the principles above are considered likely to occur as a result of the proposed project."* *It should be noted that it is the role of the consent authority to determine whether an impact will be serious and irreversible.*	• *10.1 Remove statements in relation to SAII from the BDAR which are the role of the consent authority to determine*

Statements in relation to SAII have been removed from the Amended BDAR (Appendix 6 of the Amendment Report) as per above request from BCS.

The** consent **authority notes that the proponent has undertaken reasonable steps to reduce their impacts to SAII entities	*Recommendation*
For Box Gum Woodland CEEC, the BDAR states that the project will result in a loss of: • *10.96 ha of good condition woodlands* • *17.11 ha of derived native grasslands.* *Box Gum Woodland CEEC is listed as a candidate SAII entity under Principle 1 and Principle 2 in accordance with Section 6.7 of the Biodiversity Conservation Regulations 2017. These Principles state:* *An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because:* • *Principle 1: it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or* • *Principle 2: it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size.* *The Final Determination for this community lists the clearing of native vegetation as a key threating process for the CEEC. In addition, there is no minimum clearing threshold identified within relevant databases which could be considered an insignificant decline in this community, therefore any incremental loss in extent could be seen as contributing to the principles above.* *Given the above, adequate avoidance of Box Gum Woodland should be a critical factor of consideration for the consent authority.* *The consent authority should note that, based on the design of the project, BCS considers that the proponent has taken reasonable steps when locating the solar farm arrays to avoid higher biodiversity value representations of this SAII entity within the project site. However, further detail and justification should be provided for the transmission line alignment to demonstrate that the option proposed represents the least amount of impact to this SAII entity (See Talking Point 12 below).*	*11.1 That the consent authority notes BCS advice in relation to SAII impacts to Box Gum Woodland CEEC when considering the adequacy of avoidance and minimisation to biodiversity impacts proposed.*

The comment from BCS is noted. As noted previously, the Project no longer includes the proposed overhead transmission line and therefore all impacts identified and assessed in the EIS and BDAR associated with the transmission line are no longer relevant. The Amended BDAR, provided in Appendix 6 of the Amendment Report, presents an updated assessment of the biodiversity related impacts associated with the Project, as amended.

Avoidance measures undertaken for the transmission line should be clarified	***Recommendation***
Figure 4.1A of the BDAR details the options considered for the transmission line alignment, showing three potential considerations. *It is unclear from the Figure if the selected alignment represents the least impact to biodiversity values from the options considered.* *It would provide further context if biodiversity value mapping was overlaid in this Figure and if the Figure was supported by a Table comparing the relative impact of the options.*	*12.1 Provide further detail on the options considered for the transmission line alignment and why the proposed option represents the least impact to biodiversity values*

As noted previously, the Project no longer includes the proposed overhead transmission line and therefore all impacts identified and assessed in the EIS and BDAR associated with the transmission line is no longer relevant. The Amended BDAR, provided in Appendix 6 of the Amendment Report, presents an updated assessment of the biodiversity related impacts associated with the Project, as amended.

Further justification be provided on the minimum criterion applied in land category assessments	***Recommendations***
Section 2.2 of Appendix G states: *'Grasslands across the whole Project Area have experienced an extensive history of cropping, grazing, and pasture improvement activities. Noting that this previous disturbance, alone, does not preclude the presence of the TEC, further analysis has been completed to support classification of this grassland as Category 1-Exempt Land.* *The analysis presented below has been completed in consideration of the Final Determination (NSW Scientific Committee 2020) to determine whether these grasslands conform to the CEEC. Where the grasslands do not conform to the CEEC they have been considered and mapped as Category 1-Exempt Land.'* *In general, BCS support the approach taken to analyse potential conformance of Category 1 land with the Box Gum Woodland CEEC.* *However, it is unclear how a minimum metric of "At least 20% of flora species in Vegetation Integrity Plot are characteristic of the CEEC in the Patch and Measure proportion of understorey that is native and exotic in the Patch" was determined and the justification behind this minimum criterion. BCS also notes that some of the plots used to contribute to Category 1 land mapping would represent VI scores which are ≥15, when analysed via the BAM-C.* *Further justification with reference to the final determination for Box Gum Woodland should be undertaken to support the minimum metric of "At least 20% of flora species characteristic of the CEEC in the Patch and Measure proportion of understorey that is native and exotic in the Patch" applied to the areas of derived native grassland.*	*13.1 The proponent note that BCS is supportive of the approach taken to analyse potential conformance of Category 1 and with the Box Gum Woodland CEEC* *13.2 Further justification with reference to the final determination for Box Gum Woodland should be undertaken to support the minimum condition criterion referenced in this response*

The Amended BDAR (Appendix 6 of the Amendment Report) provides further justification to support the minimum condition criterion applied in the land category assessment.

Data inconsistencies should be reviewed	***Recommendation***
As part of the data audit, BAM-C data was compared to the BAM plot data sheets submitted to BCS. *Inconsistencies were identified between plot data sheets and the data that has been entered into the BAM-C, these inconsistencies are highlighted in Table 1-3 below. The data provided in the plot data sheets must be consistent with the data entered into the BAM-C, any errors in the calculator will have an impact on the final credit liability for the project.*	*14.1 Review the data inconsistencies referenced in this response.*

Data inconsistencies referenced in BCS's submission have been reviewed and considered in the Amended BDAR (Appendix 6 of the Amendment Report).

4.3 Heritage NSW

Consultation
Please ensure that all requests for redaction made by the Registered Aboriginal Parties (RAPs) is properly managed. Details of one RAP who wished to not have their details made public has been included in ***Appendix 1****.*

The comment from Heritage NSW is noted. Personal details from RAPs during ongoing consultation have been redacted in the original Aboriginal Cultural Heritage Assessment Report (ACHAR) and the Addendum ACHAR included in Appendix 7 of the Amendment Report.

Aboriginal Cultural Heritage Assessment Report (ACHAR)
Section 5 of the ACHAR has not used any recent archaeological data from the Mudgee and Ulan areas, which have been subject to extensive archaeological investigations. In accordance with Requirement 1a of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010) please provide a more detailed and up to date synthesis of the archaeological and ethnohistory of the region and describe and evaluate the existing predictive models for the region. Following this updated assessment, the predictive model may require updating. Alternatively, please provide justification on why such region contextualisation was not included. *Heritage NSW notes that the Aboriginal Heritage Information Management System (AHIMS) search is greater than 12 months old at the time of submission. Heritage NSW requires, as per Requirement 1b of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010), that AHIMS searches be less than 12 months old.* *Please provide survey track logs, as per Requirement 5 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010), to enable Heritage NSW to assess the efficacy of the survey coverage.*

Heritage NSW comments have been addressed in Section 4 of the Addendum ACHAR (refer to Appendix 7 of the Amendment Report). Specifically:

- Section 4.1 and Section 4.2 provide a more detailed and up to date synthesis of the archaeological and ethnohistory of the region.
- Section 4.5 provides a description and evaluation of the existing predictive models for the region.

An updated AHIMS search was completed in January 2024 as part of the preparation of the Addendum ACHAR and are presented in Section 4.4 of the Addendum ACHAR (refer to Appendix 7 of the Amendment Report).

Furthermore, an updated survey map is provided in the Addendum ACHAR (see Figure 5.1 of Appendix 7 of the Amendment Report). It is noted that only the archaeologists participating in the survey were carrying GPS devices and the areas were surveyed, with the Registered Aboriginal parties spaced at appropriate intervals (as described in detail in the Addendum ACHAR) to ensure adequate coverage.

Areas of Potential Archaeological Deposit and Archaeological Investigation – AHIMS Registration
As per Section 89A of the National Parks and Wildlife Act 1974, please ensure that all sites, including untested areas of Potential Archaeological Deposit (PAD), have been registered with AHIMS.

Umwelt's archaeologist has prepared and submitted site cards for all sites, including untested areas of Potential Archaeological Deposit (PAD), to be registered with AHIMS. All sites have therefore been registered.

Areas of Potential Archaeological Deposit and Archaeological Investigation – Agricultural Use
Please provide explication on the boundary of PAD 2 and how its boundary relates to the agricultural uses of the surrounding paddocks.

This has been addressed in Appendix B of the Addendum ACHAR (in Appendix 7 of the Amendment Report).

Areas of Potential Archaeological Deposit and Archaeological Investigation – Axes and Portions
Please provide further context of the regional significance of the axes (and portions).

This has been addressed in Section 4 of the Addendum ACHAR (in Appendix 7 of the Amendment Report).

Areas of Potential Archaeological Deposit and Archaeological Investigation – Site Boundaries
Please provide information on how site boundaries were determined as several sites have low artefacts counts (<5) but stretch over hundreds of metres.

Where a number of 'isolated artefacts' were situated on the same landform (e.g. erosion scour on a mid-hillslope), these disparate artefacts were considered likely to be associated with each other and therefore were grouped together as a low-density scatter.

Aboriginal Cultural Heritage Management Plan (ACHMP)
The ACHAR recommends that an ACHMP be developed and implemented for the project. Heritage NSW recommends the ACHMP should be included in the Conditions of Approval and that an ACHMP be created and approved by Department of Planning and Environment, prior to any development activities occurring within the project area. Recommended conditions for an ACHMP have been included in Attachment B. *The ACHAR and ACHMP must take into consideration secondary impacts (e.g. road grading, road widening, public road upgrades, compaction, erosion) and long-term conservation options to areas of PAD and artefact sites within and adjacent to the project area. Avoidance of ACH does not denote its long-term conservation and protection. Provisions should include regular (e.g., annual, bi-annual) monitoring of the sites and if secondary impacts are present (e.g., erosion) then PADs should be subject to test excavations so that areas of conservation value and moderate to high significance are adequately avoided and protected.* *Within the ACHAR, the RAPs requested that they and an archaeologist be present during the demarcation and fencing of site boundaries. Heritage NSW recommends that such a provision be included in the ACHMP.* *If there is potential for the PADs to be impacted and/or extend further into the construction impact area, then Heritage NSW recommends test excavations to identify the nature, extent, and significance of any subsurface deposit. This will ensure that further impacts can be avoided, and the sites adequately conserved.*

Comment from Heritage NSW is noted. A commitment to develop and implement an ACHMP in consultation with the RAPs is included in the EIS as a management measure (refer to Section 6.9.4 and Appendix 18 of the EIS).

The ACHMP will detail provisions for the protection of PAD as well as for monitoring inspections to ensure avoidance and protection is maintained. However, secondary impacts to PAD areas are not proposed as part of the Project. All PAD areas are designated for avoidance in relation to the current development footprint and design. As such, provisions for test excavation of PAD areas are not proposed. If, however future modifications to the project design and/or layout propose disturbance of PADs, then the requirement for test excavation would be considered. As such, Umwelt recommend that provisions for test excavation are not included in the ACHMP, but that if any future impacts are proposed (e.g. from a modification), that the ACHMP would require an update to include the provision for test excavation.

Additional Information
Please clarify the significance statement of site AS2, which states that "based on the level of disturbance within the site and the fact that it is located on privately owned land, [it] has low value for research potential, integrity and education potential". It is unclear from this statement why its location of privately owned land would influence its research, integrity, and educational potential.

This has been addressed in Section 4 of the Addendum ACHAR (in Appendix 7 of the Amendment Report). It is noted that this statement was included as further justification for understanding the high level of continued impact from pastoral and cultivation on this private property (in comparison to an area not subject to these forms of continued impact). It is further acknowledged that privately owned land does not affect significance and the original statement was an error in expression.

Aboriginal Heritage
Below are our recommended draft conditions for the protection of Aboriginal Heritage and the implementation of an Aboriginal Cultural Heritage Management Plan. *1) All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval.* *2) The Registered Aboriginal Parties (RAPs) must be kept informed about the SSD. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the SSD.*

As highlighted throughout the EIS, the Project's layout has been developed to maximise the use of existing disturbed areas and avoid areas of PAD, riparian corridors (vegetation around waterways) and to minimise, where possible, impacts to identified surface sites. This has allowed for areas of moderate to high archaeological/scientific and cultural significance (i.e. all PADs) to be avoided while allowing the development of appropriate management of areas of lower archaeological/scientific and cultural significance (i.e. some of the Artifact Scatters (AS) and Isolated Finds (IFs)). During final design and construction planning, further consideration will be given to minimising impacts to these sites, however, for the purposes of the ACHA, it is assumed that partial or complete impact to all IF and AS sites/areas may occur.

As noted earlier, a commitment to develop and implement an ACHMP in consultation with the RAPs is included in the EIS as a management measure (refer to Section 6.9.4 and Appendix 18 of the EIS). The ACHMP will outline the measures required to be implemented through all stages of the Project to manage Aboriginal cultural heritage values, including the protection of Aboriginal archaeological sites where impacts can be avoided and management methodologies for sites where impact cannot be avoided.

*Aboriginal **Cultural Heritage Management Plan***

3) Prior to carrying out any development, the Applicant must prepare an Aboriginal Cultural Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:

- *a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary.*
- *b) be prepared in consultation with Heritage NSW and Aboriginal Stakeholders.*
- *c) include a methodology for a test excavation and salvage excavation program with Aboriginal Stakeholder participation of sites to be impacted with consideration to understanding site characteristics, and local and regional archaeological context.*
- *d) include a description of the measures that would be implemented for:*
  - *i. protecting the Aboriginal heritage items identified within the project footprint or items located outside the approved development footprint, including fencing off the Aboriginal heritage items prior to commencing construction.*
  - *ii. salvaging and relocating the Aboriginal heritage items located within the approved development footprint.*
  - *iii. salvaging, relocating or avoiding any Aboriginal heritage items located within the approved development footprint identified during test excavations of the site.*
  - *iv. include updated baseline mapping of the heritage items within and adjoining to the development disturbance area.*
  - *v. include updated mapping of all areas that have been and will be subject to monitoring, test excavations, and salvage excavations*
  - *vi. include conservation options for the mitigation and avoidance to impacts AHIMS registered sites situated within and outside the project footprint.*
  - *vii. prepare a methodology outlining when Registered Aboriginal Parties must be notified of changes to the Heritage Management Plan.*
  - *viii. include a procedure for assessing significance of Aboriginal Objects identified during the monitoring, test excavations, and salvage excavation and ensure that the management and mitigation measures are considered for all sites, and with special consideration for those of high significance.*
  - *ix. a strategy for the long-term management of any Aboriginal heritage items or material collected during the test excavation or salvage works.*
  - *x. a contingency plan and reporting procedure if:*
    - *(1) an Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by Heritage NSW.*
    - *(2) the Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction.*
    - *(3) the Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction.*
  - *xi. ensuring workers on site receive suitable heritage inductions prior to carrying out any development on site, and that records are kept of these inductions; and*
  - *xii. ongoing consultation with Aboriginal stakeholders during the implementation of the plan; and*
- *e) include the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s), prepared by a suitable qualified expert. The Aboriginal Cultural Heritage Excavation Report(s), must:*
  - *xiii. be prepared in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW (2011) and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (2010) and*
  - *xiv. document the results of the archaeological test excavations and any subsequent salvage excavations (with artefact analysis and identification of a final repository for finds).*

*Aboriginal **Cultural Heritage Management Plan***
xv. The RAPs must be given a minimum of 28 days to consider the report and provide comments before the report is finalised. The final report must be provided to the Planning Secretary, Heritage NSW, the relevant Councils, and the relevant Local Aboriginal Land Council, and the RAPs within 24 months of the completion of the Aboriginal archaeological collections and excavations (both test and salvage). *f) where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition and include registration in the Aboriginal Heritage Information Management System (AHIMS).*

The comments from Heritage NSW are noted. As noted earlier, a commitment to develop and implement an ACHMP in consultation with the RAPs is included in the EIS as a management measure (refer to Section 6.9.4 and Appendix 18 of the EIS).

4.4 Crown Lands

Crown roads
As per Section 6.5.3.7 Other Land Use Impacts of the EIS, the Proponent has made an application to close and purchase the Crown roads within the Project Area. Appendix 4 – Schedule of Lands shows nine items as Crown ownership with no reference or plan label – the assumption is made that these are Crown roads. Should works or construction be required on the Crown roads prior to the application to close and purchase being finalised, a Crown Lands licence may be required to authorise any occupation or works. Information on Crown Lands licences can be found here - https://www.crownland.nsw.gov.au/licences-leases-and-permits/do-i-need-licence-or-lease

The comment from Crown Land is noted. Consultation with Crown Land commenced mid-2021 and has been ongoing since the submission and exhibition of the EIS as outlined in Section 5.2 of the Amendment Report.

An application to close Crown Roads within the Project Area was made on 12th November 2021, delivered to the NSW Department of Planning, Industry & Environment — Crown Lands Office (now known as the Department of Climate Change, Energy, the Environment and Water (DCCEEW)).

Since late 2022, RES has continued to liaise with Crowns Land regarding the progress of the application.

In September 2023, the two host landowners subject to the Crown Road closure were formally notified of the proposal by the Crownlands office and were given 28 days to express an interest in purchasing and provide comments. The process is now at the decision point for the delegate of the minister administering the *Crown Lands Management Act 2016* to dispose or retain the Crown road's, having received the responses from landowners.

Waterway Boundary Determination
It is noted that waterway known as Tallawang Creek is within the project area (refer Figure 3.2 indicative Transmission Line Alignment on page 84 of the EIS). Information on water boundary determination can be found on the Crown Lands website - https://www.crownland.nsw.gov.au/resources/water-boundary-determination. Should it be determined that the waterway is Crown waterway within the site and proposal area, and encroachment is required, authority to access and/or use the Crown waterway will be required.

The EIS identified that the Project would require access over Tallawang Creek for the purposes of the proposed overhead transmission line. However, recent amendments to the Project (as mentioned in **Section 3.1** and detailed in Section 3 of the Amendment Report) have removed the overhead transmission line from the Project as this is now the responsibility of the electricity network operator. As a result, the Amended Project will no longer require access over Tallawang Creek.

Schedule of Lands
It should be noted that Appendix 4 of the EIS – Schedule of Lands incorrectly shows the following and requires correction: • *Lot 62 DP 750767 as Crown controlling – this lot is freehold land as per land Title.* • *Lot 68 DP 750767 as Crown controlling – this lot is freehold land as per land Title.*

An updated schedule of lands is provided in Appendix 2 of the Amendment Report.

4.5 DPE Water

4.5.1 Water supply

Recommendation – Prior to Determination	***Explanation***
The proponent should confirm the source(s) and associated volumes required for the projects' water demands.	*The proponent indicates an agreement has been made with a local commercial supplier to provide water for the project but notes there is the possibility of the use of farm dams or licenced groundwater bores. Confirmation on the agreed volume with the supplier is requested to confirm water availability for the project. Should farm dams or bores be required to meet water demands, assessment of the suitability of these is required, including how this would impact their current licencing arrangements (noting that amendments may be required to the existing approvals).*

As part of the updated environmental assessment for the Amended Project, RES commissioned icubed Consulting to investigate the construction and operational water demands as well as suitable water supply options for the Amended Project. The Water Resource Assessment from icubed is provided in the Amended Water Resources Impact Assessment (WRIA) completed by Umwelt (refer to Appendix 12 of the Amendment Report).

The following water supply options are being considered:

- **Potable water** –
    - Ulan Water is located approximately 35 km east from the Project Area and has been identified as the local contract supplier. Initial discussion with Ulan Water has confirmed that potable water supply is available with quantities dependent on timing, supply and availability.
    - Lake Windemere is approximately 75 km south of the Amended Project Area and is currently at 93% capacity (WaterNSW, 2024).

- **Non-potable water** – the following options are available:
    - Ulan Water is available for non-potable water supply. Initial discussion with Ulan Water confirmed that non-potable water supply is available with quantities dependent on timing supply and availability.
    - Sourcing treated grey water and recycled wastewater.
    - Onsite boreholes and property owners' dams. One groundwater bore (GW0805247) is located within the Project Area adjacent to and east of Castlereagh Highway. The bore is described as being drilled to 42 m in depth and for stock and domestic water supply purposes. The last recorded groundwater depth was recorded as 12 m below ground on 15/02/2013 (WaterNSW, 2024a).
    - Local dams owned by property owners. The maximum harvestable right for all dams within the Project Area was estimated to be 91 ML, making on-site storage a viable option.

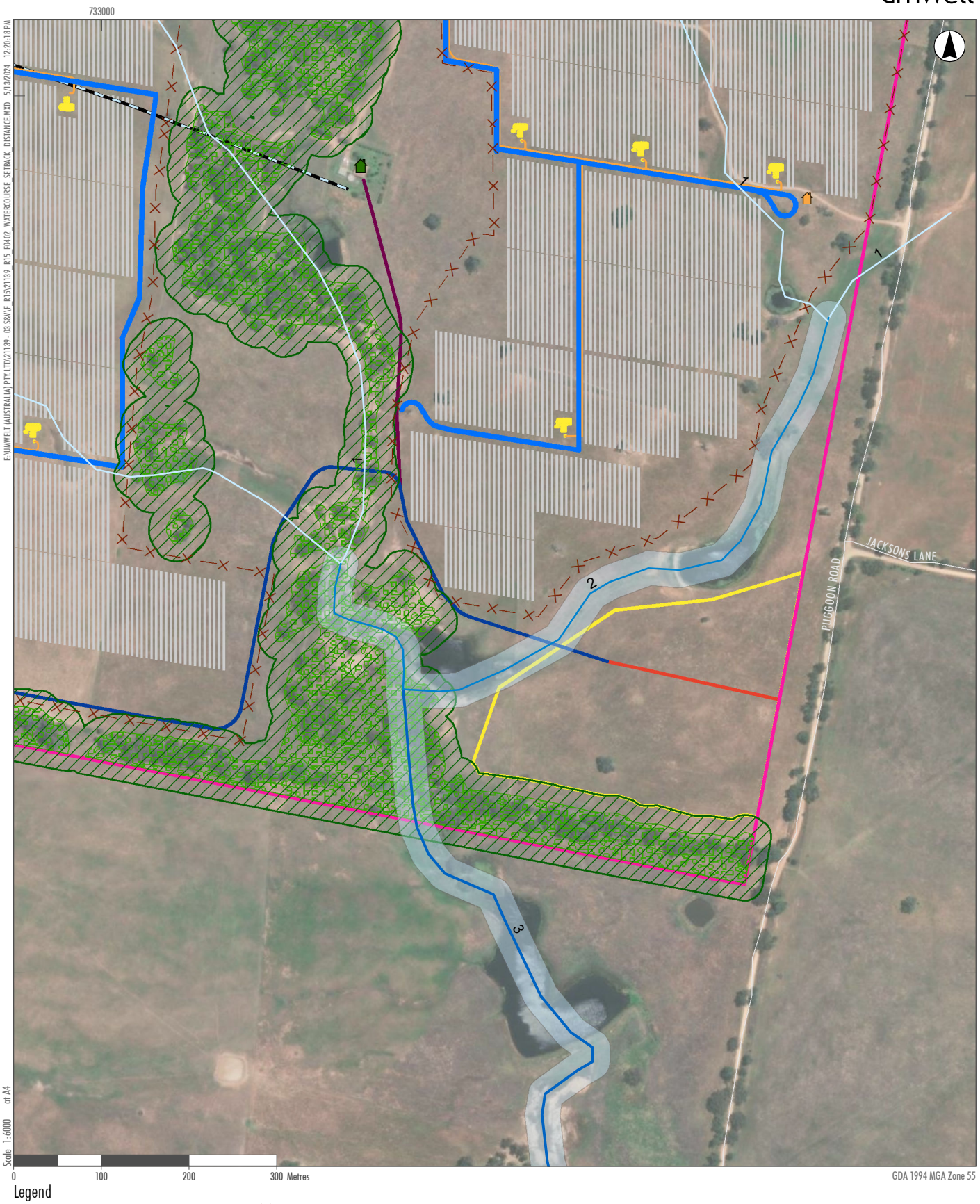
In addition, options for water conservation, specifically alternatives and initiatives to minimise potable and non-potable water demand, were investigated. Initiatives included the use of polymers in dust suppression, rainwater collection, employing recycled water in construction, leak detection and repair, and implementing education and awareness programs to promote responsible water usage among workers. Overall, by implementing these alternatives and initiatives, the Tallawang Solar Farm can significantly reduce water demand, conserve water resources, and promote sustainable water practices.

4.5.2 Impact to Watercourses

Controlled Activities: Recommendation – Prior to Determination	***Controlled Activities: Explanation***
The proponent should confirm that the 2nd order watercourse in the south-eastern part of the site has been provided with a setback in accordance with the Guidelines for Controlled Activities.	*The EIS notes the setback of 40 m from watercourses with biodiversity values. While this generally appears to have been applied, confirmation is requested that a setback for the 2nd order watercourse in the south-eastern part of the site has been provided in accordance with the Guidelines for Controlled Activities.*

It is noted that, as discussed in **Section 3.1,** several amendments are proposed to the Project layout and development footprint that were presented in the EIS. The Amended Project Layout is shown on **Figure 3.1**.

The Amended Project Layout provides setback distances (ranging from 10 m to 40 m) around watercourses with biodiversity value. In particular, the 2nd order and 3rd order watercourses within the south-eastern part of the Amended Project Area have been provided with a setback in accordance with the *Controlled Activities – Guidelines for riparian corridors on waterfront land* (DPE, 2022) (i.e. a buffer of at least 20 m from the edge of the creek channel), as illustrated on **Figure 4.2**.



Legend

- Project Area Boundary
- Proposed Single Axis Tracker
- Temporary Workers Accommodation (TWA)
- BESS and DC-DC Coupled PCS with Hardstanding
- Proposed Medium Voltage Reticulation
- Proposed Access
- Construction Compound
- Temporary Laydown
- Proposed O&M Facility
- Proposed Substation
- Grid Connection Infrastructure (proposed by EnergyCo)
- Security Fence
- Proposed Landowner Access Track
- Temporary Workers Accommodation (TWA) Access
- Proposed Post Construction Landowner Access Track
- Involved Dwelling
- Involved, Unoccupied Dwelling
- Native vegetation (Umwelt)
- Native Vegetation Buffer, 20m
- Local Road
- State Road
- State Road (Highway) Buffer 500m
- 22kV Distribution Line (to be rerouted where necessary)
- Strahler Stream Order 20m Buffer

Strahler Stream Ordering

- 1
- 2
- 3
- 4
- ≥ 5

FIGURE 4.2

Watercourse Setback Distance

Image Source: ESRI Basemap Data source: NSW DFSI (2022), RES (2024)

4.5.3 Management of Soil and Water Impacts

Soil and Water Management Plan and Erosion and Sediment Control Plan: Recommendation – Post Approval
The proponent should prepare the Soil and Water Management Plan and an Erosion and Sediment Control Plan in accordance with industry standards including the guideline, Managing Urban Stormwater: Soils and Construction (Landcom 2004).

A draft Soil and Water Management Plan (SWMP) has been prepared for the Amended Project in accordance with industry standards including the guideline, *Managing Urban Stormwater: Soils and Construction* (Landcom 2004). A copy of the SWMP is provided in Appendix 12 of the Amendment Report.

4.6 DPE Hazard

BESS Design
• *Following a review of the EIS and the Preliminary Hazard Analysis (PHA) we request the following information:* • *Confirmation that the BESS will be DC-coupled and dispersed throughout the entire site. This may be imposed as a condition as the arrangement of BESS would have an impact on the risk of fire escalation between BESS subunits;*

It is confirmed that the BESS will be DC-coupled. As discussed in **Section 3.1**, several amendments are proposed to the Project including increasing the BESS capacity to 500 MW/1000 MW-h. Accordingly, a Preliminary Hazard Analysis (PHA) Addendum has been prepared by Umwelt to assess the change in hazards and risks due to the Amended Project, in particular the BESS capacity increase and the addition of the TWA facility. The PHA Addendum is attached in Appendix 13 of the Amendment Report with the key outcomes summarised in Section 6.7 of the Amendment Report.

Separation Distances
The submitted PHA does not provide the separation distance between individual DC-couple BESSs. Please provide the separation distances between individual DC-couple BESS layouts shown in Figure 1.3 of the PHA. This information will support the credibility of fire escalation between individual systems;

As noted above, the BESS capacity for the Amended Project has increased and the Project layout has been amended (refer to **Figure 3.1**). This resulted in amended separation distances between the individual DC-coupled BESS units. A Preliminary Hazard Analysis (PHA) Addendum has been prepared to evaluate and assess changes to the hazards and risks as a result of the Amended Project (refer to Appendix 13 of the Amendment Report).

Separation distances for the updated BESS layout is discussed in Section 3.2 of the PHA Addendum. Specifically, separation distance between individual DC-couple BESSs as proposed in the Amended Project are as follow:

- East-west direction – at least 110 m apart or more.
- North-south direction – at least 400 m apart or more.

Minimum Distances between Surrounding Residents
Confirmation of the minimum distance between any surrounding residents and demonstrate the risks to these residents meets the risk criteria in HIPAP No.4.

The nearest residential receiver (R195) is onsite (i.e. involved landholder) and approximately 190 m away from a DC coupled BESS unit.

Preliminary Hazard Analysis Assessment Approach
The submitted PHA appears to be overly conservative in its analysis. Given the presented BESS arrangement and its location, the conservatism in the modelling is unlikely to alter the conclusion of this assessment. However, the risk consultant may wish to consider the following information for potential improvements to future hazard analysis involving BESSs. *A. In undertaking the risk classification and prioritisation, care must be taken in its application when using the methodology described in" Manual for classification of risks due to major accidents in process and related Industries" (IAEA, 1996), available in Multi-level Risk Assessment (MLRA) (DoP, 2011). Given a BESS is recent technology, the Department considers that BESSs will not fit into the normal application of the IAEA method. In attempting to apply the methodology, an overly conservative result may occur. The risk consultant should consider the unique site-specific characteristics of the proposed BESS development and exercise judgements to establish the appropriate level of analysis to reflect the proposed development.* *B. The level of analysis required for hazardous events depends on the specific characteristics of the proposed development. Where a DC-Coupled BESS is proposed, the BESS subunits (containers) would be dispersed throughout the site, the risk consultant may consider the unique aspects such as:* • *The energy capacity that each individual dispersed BESS would have;* • *The distances between individual dispersed BESSs and the likelihood of any propagation between two, individual dispersed BESSs; and* • *The distances from any individual dispersed BESS and surrounding residents or sensitive receptors.* *In undertaking the risk classification and prioritisation, care must be taken in its application when using the methodology described in" Manual for classification of risks due to major accidents in process and related Industries" (IAEA, 1996), available in Multi-level Risk Assessment (MLRA) (DoP, 2011). Given a BESS is recent technology, the Department considers that BESSs will not fit into the normal application of the IAEA method. In attempting to apply the methodology, an overly conservative result may occur. The risk consultant should consider the unique site-specific characteristics of the proposed BESS development and exercise judgements to establish the appropriate level of analysis to reflect the proposed development.* • *C. These unique aspects, where distances are large, may be adequately address in a qualitative manner.* *For BESS, the approach of analysis will depend on the selected BESS system and arrangement.* *In section 5.2.1 and Appendix C of the PHA the radiant heat fluxes from a BESS subunit fire is presented. The Department notes that the assumed temperature is 1000oc. The risk consultant may wish to consider the temperatures described in the following reports.* • *Ditch B, Zengm Research Technical Report Development of Sprinkler Protection Guidance for Lithium Ion Based Energy Storage System, FM Global, June 2019; and* • *McMickem Battery Energy Storage System Event Technical Analysis and Recommendations, DNV GL, Issue A, 18 July 2020.* *Similarly, the risk consultant may wish to examine recent UL 9540A test results and temperatures of these fire tests; to establish the assumed temperature for a fire model;* *D. In section 5.2.2 and Appendix D of the PHA modelling of overpressures relating to the ignition of flammable vapours within a BESS subunit is undertaken. Given this event occurred at the McMicken Energy Storage facility on 19 April 2019 and the technology of BESSs has quickly developed since, the risk consultant may wish to investigate if recent designs in batteries and BESS subunits have appropriately mitigated or prevented this scenario and whether the scenario requires evaluation of the explosive consequences; and*

Preliminary Hazard Analysis Assessment Approach
E. In section 5.2.3 and Appendix E the modelling of Hydrogen Fluoride within a smoke plume from a BESS has been examined. The Department acknowledges that batteries that use lithium hexafluorophosphate (LiPF6) or similar lithium salt in the electrolyte may generate Hydrogen Fluoride (HF) in a fire event. However, it is highlighted that HF is part of a mixture of off-gases and would represent only a small proportion of the smoke plume and that the peak release rates of HF are likely to occur for a fully developed fire where lift-off of the smoke plume has occurred. According to the publication Toxic fluoride gas emissions from lithium-ion battery fires, Sci Rep. 2017, Aug 30 by Larsson F, Andersson P, Blomqvist P, Mellander BE the concentration of HF release did not exceed 150 ppm. In addition, based on recent BESS fire incidents, the impact from HF release has not been reported as a major concern. As such, the risk consultant may wish to consider if it is necessary to undertake the consequence analysis for the HF released in a BESS fire smoke plume. *Overall, the consequence analysis presented in the PHA may be considered overly conservative and result in consequence distances that are not proportionate to the hazards associated with BESSs;* *The following is provided for information purposes. Given the knowledge developed in the past few years and concerns raised from FRNSW, fire escalation between the BESS subunits resulting in a bigger fire event is the major concern for all BESS proposals that are above 30 MW. As such, in the case of a centralised BESS, the Applicant must focus on demonstrating that the separation between BESS subunits is sufficient to mitigate fire escalation. Furthermore, the Applicant must demonstrate that the area available for the entire BESS is sufficient given the separation distances between BESS subunits.*

The comment from DPHI Hazard is noted.

4.7 DPI Agriculture

Maintenance of Groundcover
There is no detail provided on how the groundcover will be managed on the site during operations, particularly as sheep are proposed to be grazed on the site also. Details on the reinstatement of vegetation post construction and how the site will be managed in response to the variability of seasonal conditions etc. To overcome this the following condition is suggested: • *Ensure groundcover is maintained at a minimum of 70% to prevent soil erosion by the development of a groundcover management plan This will include detail on final construction reinstatement of land and undertake appropriate vegetation establishment and management that achieves from current and potential impact of the proposal on the site as per Meat and Livestock guide 2.02 (https://mbfp.mla.com.au/pasture-growth/tool-22-assessing-groundcover/) or Soil Knowledge Network Inc (https://www.nswskn.com/Solar%20farms/ and https://www.nswskn.com/groundcover/.)* *As sheep grazing is considered to assist with groundcover management outcomes, the correlation of grazing, by identifying stocking rates, with climate, groundcover, etc is critical as it can provide relevant data to assist with landsharing arrangements. It can also provide a measure of agricultural productivity that can be achieved with the solar farm operation.*

As highlighted throughout the EIS, ground disturbance associated with the construction of the Project would be minimal as the majority of the development footprint contains solar array panels which are typically installed by pile driving. It is therefore expected that most of the groundcover would be maintained during the construction phase. Construction activities will be managed through the implementation of a Construction Environmental Management Plan (CEMP) that will include measures to manage and mitigate groundcover disturbance during construction. Where disturbance cannot be avoided, and vegetation need to be reinstated, this will be undertaken and managed through the implementation of a Biodiversity Management Plan.

Section 6.5.4 of the EIS outlines that once the Project is operational, solar (sheep) grazing would be managed through the implementation of a Sheep Grazing Vegetation Management Plan (SGVMP). The SGVMP will be developed in consultation with DPI Agriculture and the relevant host landholder.

In addition to managing stock welfare and health (which have been included as a commitment in the EIS), the SGVMP would also include measures to manage groundcover once the Project is operational, with the aim of achieving a minimum target of 70% groundcover. It is noted that this may be difficult to achieve under certain seasonal conditions such as a dry or low rainfall period. Measures to manage stocking rates during these periods will be outlined in the SGVMP.

Impact to agricultural production
An assessment of agriculture on the site and region, and the changes due to the solar development on agricultural enterprises and production values during construction and operation are not undertaken. Hence the following requirement is required: *The current agricultural production on the site and region is assessed, and changes to the site productivity from the solar farm is to be quantified. This information can also be used for landsharing arrangements during the solar farm's operation, if grazed, and will assist with the rehabilitation of the site to achieve the final agricultural landuse. It can also provide a guide to identify the land use metrics for final decommissioning purposes, in addition to the land and soil assessment information that also provides baseline data to achieve final land rehabilitation outcomes*

The EIS concluded that the Project would impact agricultural productivity within the Project Area by removing approximately 400 ha of marginal cropping land from production and remove cattle grazing from the Project Area. It is expected that these impacts would reduce once the Project is operational, with the entire Project Area being able to support sheep grazing activities.

To calculate the approximate monetary impact to agricultural productivity, a review of the indicative $/ha values for selected commodities (grazing and cropping) were calculated through utilising land use data available from the Australian Bureau of Statistics (ABS), the 2020-21 agricultural census and agricultural productivity data from the Australian Agricultural Census 2020-21. The indicative values provide a general indication of land productivity for agricultural land use and potential impacts on agricultural productivity associated with the Project. The calculated value range for cropping ranges from $426.77/ha (cereals e.g. wheat and barley) to $1206/ha (other crops e.g. canola). For the purposes of the calculations below an average of $816/ha has been assumed. This is considered conservative and is likely to be much. The grazing production figure used is based on $151.22–$262.78/ha from Australian Agricultural Census 2015–16.

Based on this value range for cropping, the following productivity estimates are made:

- Productivity of approximately $326,400 for cropped land (400 ha).
- Productivity of between $136,098 to $236,502 (covering 900 ha representing the balance of land within the Project Area).
- A total range of $462,498 to 562,902 in annual productivity across the entire Project Area (1300 ha) was calculated.

It should be noted that these calculations are not averages and did not consider years of climatic weather conditions, such as drought, where on farm income can be significantly reduced (such as the 2017–2020 drought) through no or reduced cropping and significantly reduced carrying capacity for livestock. Years following drought also can reduce productivity as farms recover.

On a regional basis (Mid-Western Regional LGA) the economic output for agriculture was $88 million for the MWRC LGA (refer to Australian Agricultural Census 2020–21 visualisations – LGA - DAFF (agriculture.gov.au)).

Based on this regional productivity and assuming no further agricultural activities would continue at the Project Area (noting sheep grazing will continue), this would result in a worst case scenario between 0.52% to 0.67% (approximately) in lost agricultural production in the region over the lifetime of the solar farm.

It is not expected that land capability of the Project Area will be impacted as a result of the Project, rather access to this land for more intensive agriculture would be temporarily impacted. Should the Project be decommissioned, there will be an opportunity to return the land to the previous level of productivity.

4.8 DPI Fisheries

Key Fish Habitat
There is no Key Fish Habitat within the footprint of this development. DPI Fisheries have no input to add.

Comment from DPI Fisheries is noted.

4.9 Fire and Rescue NSW (FRNSW)

Fire Safety and Management Measures
It has been the experience of FRNSW that BESS facilities pose special problems of firefighting and special hazards exist that may require additional fire safety and management measures. Due to these unique challenges FRNSW make the following recommendations: • *That a comprehensive Fire Safety Study (FSS) is developed. The FSS is to be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper (HIPAP) No.2 and is to meet the operational requirements of FRNSW.* • *That the development of the FSS consider the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence. The FSS should consider worst-case fire scenarios including a full BESS unit fire and demonstrate no fire propagation within the facility.* • *That the FSS be submitted, reviewed, and meet the operational requirements of FRNSW prior to any further submission being made to FRNSW; this includes: an Initial Fire Safety Report (IFSR) and / or Performance-Based Design Brief / Fire Engineering Brief Questionnaire (FEBQ).* • *That the development of a FSS be a condition of consent.* • *That a comprehensive ERP is developed for the site in accordance with HIPAP No.1.* • *That an Emergency Services Information Package (ESIP) be prepared in accordance with FRNSW fire safety guideline – Emergency services information package and tactical fire plans.*

As outlined in Section 6.13.3 and Appendix 18 of the EIS, RES will develop an Emergency Management Plan (EMP) and detailed emergency procedures consistent with *Hazardous Industry Planning and Advisory Paper No. 1 Emergency Planning* (HIPAP 1) and the RFS *Planning for Bushfire Protection* (or equivalent) should the Project be approved. Reference will also be made to Australian Standard AS 3745-2010 Planning for emergencies in facilities for the preparation of the EMP. A draft outline for the EMP is provided in the Preliminary Hazard Assessment (PHA) in Appendix 16 of the EIS. In addition, an Emergency Services Information Package (ESIP) in accordance with *FRNSW fire safety guideline – Emergency services information package and tactical fire plans* will be prepared as part of the EMP. Prior to preparation of the EMP, consultation will be undertaken with RFS, FRNSW and the Local Emergency Management Committee (LEMC) to determine any specific issues that the RFS, FRNSW and LEMC would like addressed in the EMP and establish key contacts for ongoing consultation.

Furthermore, a comprehensive Fire Safety Study (FSS) will be developed for the Project in accordance with the requirements of *Hazardous Industry Planning Advisory Paper* (HIPAP) No.2 and the operational requirements of FRNSW. The FSS will be prepared in consultation with FRNSW and will include an Initial Fire Safety Report (IFSR) and / or Performance-Based Design Brief / Fire Engineering Brief Questionnaire (FEBQ).

An updated summary of the Project's consolidated management and mitigation measures is provided in Section 7 of the Amendment Report.

4.10 NSW Rural Fire Service (RFS)

Bushfire Assessment
The NSW Rural Fire Service holds no objection to the proposed development, subject to a report being submitted for the proposal by a BPAD accredited bush fire consultant which demonstrates how the proposed development conforms with, or deviates from, the aims and objectives of Planning for Bush Fire Protection 2019. *Specific mention is to be made in the report with regards to Sections 8.3.5 - Wind and Solar Farms and 8.3.9 - Hazardous Industry, including the potential impact of the Battery Storage Systems in firefighting strategies and mitigating factors to reduce risks for attending emergency services.*

As outlined in Section 6.13.3 of the EIS, a qualitative bushfire assessment was completed for the Project as presented in the EIS in accordance with the *Planning for Bushfire Projection 2019* (PBP 2019), including an assessment of potential bushfire hazards applicable to the Project Area and the proposed bushfire management for the Project. The assessment concluded that through the development and implementation of relevant bushfire management measures (outlined in Section 6.13.3.3 of the EIS) and identified hazard safeguards and controls (outlined in Section 6.13.1.3 of the EIS), the potential bushfire risk associated with the Project can be appropriately managed.

In addition, a bushfire assessment has been undertaken for the TWA facility associated with the Amended Project (refer to Appendix 14 of the Amendment Report for the bushfire assessment report).

4.11 Transport for NSW

The Proposed Intersection Upgrade and Site Access
Appendix 19 - Concept drawings for Project access, includes a BAR / BAL design in addition to a (short) CHR / AUL. It is unclear why the BAR / BAL has been provided, as it is not addressed in the TIA or the EIS. Notwithstanding this, TfNSW does not consider a CHR(s) is sufficient to provide the required storage length, to accommodate the proposed turning (construction) traffic volumes. *Appendix 19 further shows a section of unsealed road between the site access and the Castlereagh Highway intersection proposed upgrades along Jacksons Lane. TfNSW requires Jackson Lane be sealed between the site access and intersection connection to the Castlereagh Highway (inclusive of all proposed works), to reduce the extent of wear and road damage.* *As the proposed works are within the classified (state) road reserve, TfNSW concurrence (with Council as the Roads Authority) will be required, under Section 138 of the Roads Act 1993. Further to this, the developer will be required to enter into a 'Works Authorisation Deed' (WAD) with TfNSW, or other suitable arrangement as agreed to by TfNSW.*

Further consultation with Transport for NSW has been undertaken following the exhibition of the EIS to discuss their submission. This is discussed in Section 5 of the Amendment Report.

In response to Transport for NSW's submission, the proposed intersection treatment has been updated to a standard (full size) CHR & AUL treatment, as further discussed in Section 3 of the Amendment Report. The updated intersection treatment has been assessed in the updated environmental assessment as summarised in Section 6 of the Amendment Report.

The proposed intersection upgrade and site access works will be subject to further detailed design prior to construction, in consultation with Mid-Western Regional Council and Transport for NSW.

Should the Project be approved, relevant approvals under section 138 of the *Roads Act 1993* will be sought from Council and Transport for NSW for the proposed intersection upgrade and site access works.

Cumulative Impacts
A number of large scale / renewable developments within proximity to the project site either recently approved or in planning stages, have been included within Appendix 17 – Cumulative Impact Assessment, a comparative assessment table, identifying where potential cumulative impacts may need to be considered. Table 4.7 - Potential Total Cumulative Traffic Generation of the TIA, directly address ("worst case") cumulative traffic impacts along the transport route/s (in particular) Golden Highway and North and South of the site on the Castlereagh Highway. Only a limited number of developments (Barneys Reef Wind, Stubbo Solar Farm and Dunedoo Solar Farm) have been included. TfNSW notes further consideration of the cumulative impacts needs to be given to other nearby projects such as Birriwa Solar Farm (EIS exhibition completed), Bellambi Heights Solar Farm & the Liverpool Ranges Wind Farm (approved), which may potentially have overlapping construction timeframes with Tallawang Solar Farm. *Furthermore, the assessment undertaken primarily focuses on the cumulative impacts of traffic passing the key intersection and the Golden Highway transport route, however additional assessment is required to consider additional cumulative impacts, such as accommodation availability, infrastructure, services, worker transportation (shuttle buses).*

An Amended Traffic Impact Assessment (TIA) has been prepared to assess the Amended Project, which provides an update to the cumulative traffic impact assessment presented in the EIS. The Amended TIA is provided as Appendix 11 of the Amendment Report, with the key outcomes summarised in Section 6 of the Amendment Report.

OSOM & Largest Design Vehicles
The project proposes a maximum of four (4) 16 axle OSOM vehicle movements to site over the 34 month construction period, with the potential for two (2) OSOM vehicles to arrive to site on the same day. TfNSW note, the swept paths of OSOM turn movements into Jacksons Lane from the Castlereagh Highway demonstrate the need to use the opposing travel lanes, which will need to be addressed further in the Traffic Management Plan (TMP), and a Traffic Guidance Scheme (TGS), detailing how the key movement will be managed under approved traffic control conditions. TfNSW require further details regarding the dimension and mass of the proposed loads. *Section 4.2.1 in the TIA proposes B-Doubles (size unknown) as the largest design vehicle (excluding OSOM), furthermore it is stated that the use of "Type A road trains or B-triples for transport" is preferred and may be considered by the transport contractor. However, the proposed intersection upgrade is demonstrated to accommodate the swept paths of a B-Double (size unknown) only. Further clarification needs to be provided to clearly identify the vehicle type and dimensions of the largest design vehicle/s proposed by the development.*

The anticipated vehicles to be used for the solar farm components would typically comprise the following:

- **Solar PV modules**: B-double (although type A road train or B-triple preferred) with typically 27 modules/pallet and 16 to 18 pallets / container.
- **Battery storage**: B-double (although type A road train or B-triple preferred) with one unit per trailer.
- **Inverters**: B-double (40-foot container) with 100-tonne mobile crane for offload and typically two skids, one truck.
- **Sub-station transformers, O&M Building and control room**: OSOM vehicles anticipated to be used would be 16 x 8-wheel platform trailer approximately 43.2 m in length and 4.9 m in width. Typical total installed weight is 210 tonnes with typical transportation weight of 130 tonnes.

Rail Impacts
Section 4.3.4 of the TIA refers to a (yet to be appointed) transport contractor undertaking (future) detailed assessment of the construction transport impacts to the Wallerawang – Gwabegar Railway line. TfNSW understand the proponent has commenced consultation with ARTC, the Rail Infrastructure Manager (RIM) for this location, to address rail impacts of the development. The Consent Authority should ensure ARTC has had the opportunity to review and provide comment on this application regarding any rail related matters to determine if any actions are required and if applicable, captured in any future consent conditions.

As outlined in **Section 4.1**, ARTC has made a submission on the EIS for the Project to which a response has been provided.

Traffic Management Plan (TMP)
Further to the proposed inclusions in a TMP (Section 5.1 of the TIA), the TMP is to be prepared and implemented, in accordance with Australian Standard 1742.3, Work Health and Safety Regulation 2017 and in consultation with relevant Councils and TfNSW. The TMP needs to identify strategies to manage the impacts of project related traffic. TfNSW further recommends that the TMP includes:

Traffic Management Plan (TMP)
• *OSOM transportation details, including but not limited to, the requirements for permits, pilot vehicles, identification of route/s, pull-over bays, processes and approvals for contraflow / traffic control to manage restricted OSOM vehicle movements etc.* • *Traffic-related impacts of cumulative construction projects, not only at the site access intersection but also along the transport routes, in particular identifying relevant projects, key locations, pull-over bays.* • *A Driver Code of Conduct (DCoC) for haulage / transport operations which addresses, but not limited to:* ▪ *A map of the primary transport route/s (Light Vehicle, Heavy Vehicle & OSOM) highlighting critical locations.* ▪ *Identifying cumulative impacts relating to other large-scale projects and seasonal traffic (such as harvest), which may have concurrent construction timeframes, transport routes and / or collection locations. Including but not limited to relevant maps, inter-project consultation, relevant contact details, processes, policies and / or mitigation measures to manage any identified impacts.* ▪ *Any proposed temporary measures such a Traffic Guidance Scheme (TGS).* ▪ *Identification of local bus operations, including maps of routes/bus stops, and consultation with local bus operators.* ▪ *Safety initiatives for haulage through residential areas and/or school zones.* ▪ *An induction process for vehicle operators and regular toolbox meetings.* ▪ *A public complaint resolution and disciplinary procedure.* ▪ *A complaint resolution and disciplinary procedure.* ▪ *Procedures for transport in adverse weather conditions.* ▪ *Community consultation measures for peak haulage periods.* ▪ *Fatigue Management.* ▪ *Appendices of documentation relevant to external contractors and employee responsibilities, where applicable to the TMP and DCoC inclusions.*

A commitment to develop and implement a Construction Traffic Management Plan (CTMP) in consultation with the Mid-Western Regional Council and Transport for NSW is included in the EIS as a management measure should the Project be approved (refer to Section 6.6.3 and Appendix 18 of the EIS). The CTMP will include a Drivers Code of Conduct and will be designed to minimise the impact of Project construction traffic (including OSOM vehicles) on the external road network.

Intersection & Site Access Upgrade
As identified above in the preceding points, amendments and / or additional information is required to address the impacts of the development on the classified road network in particular the intersection of the Castlereagh Highway & Jacksons Lane. *TfNSW highlights that in determining the application under Part 4 of the Environmental Planning & Assessment Act, 1979 it is the consent authority's responsibility to consider the environmental impacts of any road works which are ancillary to the development, such as (inter alia) removal of trees, relocation of utilities, stormwater management, etc.* *It is recommended that the Consent Authority request the applicant to provide an updated scaled strategic design of the proposed access addressing the below points for consideration, showing:* • *Updated plans, cross sections & long sections, demonstrating the full scope of works required for any upgrade to the Castlereagh Highway and Jacksons Lane intersection. Including but not limited to provision of:* ○ *The intersection upgrade is to include standard (full sized) CHR & AUL turn treatments, designed and constructed in accordance with the relevant Austroads Guidelines, Australian Standards and related TfNSW Supplements, demonstrating all relevant line-marking, with 3.5 m lane widths, 1 m wide centre line, 2 m sealed shoulders (addition to turning lanes), 1 m verge & 6:1 or flatter batters.* ○ *The extent of the proposed sealed road surface, to further include the full section of Jacksons Lane between the site access and the Castlereagh intersection connection (inclusive of the site access).*

Intersection & Site Access Upgrade
○ *Tree removal, relocation of utilities, stormwater management, and signage etc.* • *Safe Intersection Sight Distance (SISD) requirements in accordance Austroads Guide to Road Design Part 4A with for a design speed of 110 km/h are achieved in both directions at the intersection with Castlereagh Highway.* • *Dedicated swept path diagrams, clearly identifying the size & type of the relevant design vehicles, the swept path of both the wheel base, any vehicle (load) overhang and stationary vehicle positioning demonstrating the largest design vehicle will be able to safely and efficiently arrive and depart the key intersection in both directions to access the site, travelling wholly within the required travel lanes and no additional works will be required to accommodate those vehicles. Over Sized Over Mass (OSOM) swept paths should include pull-over bays required to undertake the required traffic control processes to enable the required turn movements.* • *Note: The design needs to comply with TfNSW Strategic design requirements for DAs. To assist you in preparing the designs, please refer to link below:* *https://roads-waterways.transport.nsw.gov.au/business-industry/partners-suppliers/documents/planningprinciples/strategic-design-fact-sheet-02-2022.pdf*

Further consultation with Transport for NSW was undertaken following the exhibition of the EIS to discuss their submission. This is discussed in Section 5 of the Amendment Report.

In response to Transport for NSW's submission, the proposed intersection treatment has been updated to a standard (full size) CHR & AUL treatment, as further discussed in Section 3 of the Amendment Report. Refer to Appendix 4 of the Amendment Report for the updated scaled strategic design of the proposed access and cross sections as requested in Transport for NSW's submission.

However, during further consultation with Transport for NSW regarding the design parameters for the updated design, a number of potential concessions were discussed as the road corridor on the Castlereagh Highway at this location is constraint (narrow). During a meeting held on 14 February 2024, Transport for NSW confirmed their support regarding the following items in respect of the updated intersection design, as these would necessitate works outside the road corridor:

- Removal of the 1 m wide centre line.
- Having 4:1 batters and V-drains, rather than 6:1 batters or flatter with flat bottom drains.

As a result, the updated intersection design will not require the acquisition of private land. The updated intersection treatment has been assessed in the updated environmental assessment as summarised in Section 6 of the Amendment Report.

An Amended TIA has been prepared and provides responses to the above comments from Transport for NSW in regard to SISD requirements and swept path diagrams. The Amended TIA is provided as Appendix 11 of the Amendment Report, with the key outcomes summarised in Section 6 of the Amendment Report.

The proposed intersection upgrade and site access works will be subject to further detailed design prior to construction, in consultation with Mid-Western Regional Council and Transport for NSW.

4.12 Mid-Western Regional Council

4.12.1 Adequacy of Assessment

Assessment Approach for Social Impact Assessment and Economic Impact Assessment
Council objects to the proposal as the provided documentation is both inaccurate and inconsistent, further it fails to appropriately consider the cumulative impacts of surrounding renewable energy projects within the region. *A significant proportion of the data used continuously draws upon outdated sources. To list a few, the reports have drawn upon 2016 census data, tourism data from 2017/2018, household expenditure data from 2015/2016 and outdated accommodation data among many other inaccuracies. In particular, the current unemployment rate was identified as 6.3% within the SIA and 4% within the EIS where the actual unemployment rate is currently 2.3% (June 2022). Ultimately, the use of such data has led to the creation of many misleading assessments, skewing predicted accommodation requirements and local employment ratios along with many other predicted impacts.* *To further speak to the inaccuracies throughout the documentation, the provided EIS has identified multiple sources of infrastructure that simply do not exist. Gulgong is said to have an IGA and Coles supermarket, hospital and 8 commercial accommodation providers. Gulgong has only a small IGA supermarket (no Coles Supermarket) and a Multi-purpose Service (not a Hospital). Likewise, Dunedoo's Medical Centre has been categorised as a hospital when it is actually a single doctor operated Multi-Purpose Service (MPS). Additionally, the report identifies there are 20 flights between Sydney and Mudgee each week when there are only between 6 and 10. Such discrepancies have exaggerated the capabilities of Mid Western Region to cater for such a large scale project.* *In conjunction to the multiple inaccuracies identified, the provided documentation has further inconsistencies. The identified inconsistencies are as follow;* • *Varying study areas identified throughout the EIS, SIA and EIA. The same study area should be included in both the EIA and the SIA.* • *An estimated 175 non-local employees according to the EIS (Pg.98) whereas according to the SIA there will be 290 non-local employees (Pg. 96).* • *Pg. 38 of the EIS identifies a commencement date Mid-December 2024 whereas Pg. 48 of the same document identifies June 2023.* • *The SIA suggests occupancies rates are decreasing whilst the EIS acknowledges they will increase.*

Since the exhibition of the EIS, RES has continued to consult with Mid-Western Regional Council to discuss and resolve the concerns raised in their submission, as detailed in Section 5 of the Amendment Report.

Furthermore, the Social Impact Assessment (SIA) and Economic Impact Assessment (EIA) have been updated in response to Council's submission above and the noted discrepancies have been amended. The updated SIA and EIA are provided respectively in Appendices 15 and 16 of the Amendment Report. In particular, the SIA and EIA provide an updated assessment of the social and economic impacts of the Amended Project with updated census data, updated review of existing infrastructure and utilities available within the region.

4.12.2 Cumulative Impact

Cumulative Impact
Further, a majority of the Mid-Western Region has been identified as a Renewable Energy Zone (REZ), ultimately leading to an influx of renewable development. Consequently, Tallawang Solar Farm must consider the cumulative impacts of all surrounding development to make a fair assessment. The provided documentation has failed to do so, as cumulative consideration for; the impact on roads, workforce movements and accommodation has not been provided. As such, the provided documentation is undoubtedly inaccurate, inconsistent, incomplete and ultimately misleading. It is in considering this that Council strongly objects to the proposal.

RES acknowledges that cumulative impacts due to the CWO-REZ is one of the key concerns for Council and the community more broadly.

The cumulative impact assessment (CIA) presented in the EIS has been updated during the preparation of the Amendment Report with reference to the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE, 2022). The updated CIA is provided in Section 6 of the Amendment Report.

Furthermore, in response to Mid-Western Regional Council's submission on the EIS, an Accommodation and Employment Strategy (AES) was developed for the Project in consultation with Council (refer to Appendix 5 of the Amendment Report). The AES identified that, based on current conditions, there is limited availability of short-and long-term accommodation in the region, especially when considering other approved and/or proposed renewable projects within the REZ. The AES therefore proposed that a Temporary workers accommodation (TWA) facility is required for the Project to accommodate the proposed workforce (up to 400 workers for the full construction period of up to 36 months). The AES further proposed that the TWA facility would need to be self-sufficient in supplying services and utilities such as electricity, water supply and waste removal. This was supported by advice from the Mid-Western Regional Council. Refer to Section 3 of the Amendment report for further detail on the TWA, including an assessment of the associated impacts in Section 6 of the Amendment Report.

During 2022, EnergyCo (Energy Corporation of NSW, 2023a) carried out an investigation on the potential cumulative impacts to the communities within the CWO-REZ and how these will be mitigated whilst also providing long-term benefits to the community. The study included an extensive program of engagement with local councils, government agencies and other key stakeholders to understand key local issues and priorities in the REZ. Detailed investigations were undertaken into a number of areas such as road upgrades, training and skills development, workforce accommodation, telecommunication improvements and waste management. The report released in March 2023, summarising research carried out to date, key findings and opportunities, is available on EnergyCo's website.

4.12.3 Further Information Required

Further Information Requested
• *Council requests the following information prior to the determination of the proposed development;* • *Council request the mentioned Accommodation, Workforce & Procurement strategy be provided prior to the determination of the proposed development so a proper assessment can be made. There are a number of issues raised in the EIS and SIA where the mitigating measure is the development of this strategy. This strategy is critical to the project and needs to be completed and reviewed prior to determination.*

Further Information Requested
• *Council request the proponent revise the SIA to include both Mudgee and Dubbo within the projects identified area of social influence. These areas are included in the Economic Impact Assessment and will be socially impacted due to the proposal of workforce and accommodation to be based in these towns.* • *Council request the SIA provide an assessment on the projects impact to medical health services. This should be addressed under Pg. 100, 4.12 – Community Health and Wellbeing.* • *Council request a revision of the project's risks identified under 2.7 Project Risks and Uncertainties of the EIS. There is currently only 1 risk identified and this is an inadequate assessment for the project.* • *Council request the proponent further revise the SIA to accurately reflect the perceived population change.* • *Council request waste volumes be included within the EIS. The above requests further provide testament to the incomplete nature of the documentation provided and Council's reasoning for objecting.*

4.12.3.1 Accommodation, Workforce & Procurement Strategy

As outlined above, in line with Mid-Western Regional Council's request, RES has developed an Accommodation and Employment Strategy (AES) in consultation with Mid-Western Regional Council. A copy of the AES is provided in Appendix 5 of the Amendment Report.

The Project as presented in the EIS is now being amended with, amongst others, the inclusion of an onsite TWA facility. The updated SIA and EIA provide an updated assessment of the social and economic impacts associated with the Amended Project. The outcomes of the updated SIA and EIA are presented in Section 6 of the Amendment Report. The updated SIA and EIA are provided in Appendices 13 and 14 respectively of the Amendment Report.

4.12.3.2 Social Locality, Medical Health Services and Perceived Population Change

The AES (Appendix 5 of the Amendment Report) and updated SIA (Appendix 15 of the Amendment Report) responds to the above requests raised by Mid-Western Regional Council in their submission.

4.12.3.3 Project Risks and Uncertainties

Mid-Western Regional Council's comment regarding the inadequate assessment of the project's risks as presented in Section 2.7 of the EIS is noted. In addition to Section 2.7, Section 6.2 of the EIS provides an overview of the outcomes of the preliminary environmental risk analysis that was undertaken for the Project to identify the key issues requiring detailed assessment to as part of the EIS process. The outcomes of the preliminary environmental risk analysis have been summarised in Table 6.1 of the EIS with references to other sections in the EIS where it is discussed in detail.

Notwithstanding, the updated SIA (Appendix 15 of the Amendment Report) provides an updated assessment of the risks and uncertainties associated with the Amended Project.

4.12.3.4 Waste Volumes

Estimated waste volumes for the Amended Project are presented in Section 6 of the Amendment Report.

4.12.4 Social Impact

Workforce/Accommodation
The EIS notes there will be an estimated 580 workers during the peak construction period, which is expected to run for a period of approximately 34 months. The EIS has proposed that accommodation be sourced from surrounding towns within the Mid-Western Region during this period. Council is strongly concerned with this aspect of the project as there is currently a severe shortage of appropriate accommodation in the region for tourism, made worse by the competing demands placed upon accommodation availability by State Significant Developments (SSD) and other major project construction workforces for developments approved by Council. As mentioned above, there are varying numbers quoted in the provided reports of between 175 and 290 beds required, however Council believes this number will be much higher due to the low unemployment rate in the region. Using the data provided in EIA report, the proponent states that the project will require up to 9% of total tourism beds in the study region. *What the proponent fails to address is that there are 13 projects within and surrounding the Mid-Western Region looking to construct at the same or similar time, if all these projects utilised 9% of the local tourism beds, this is 121% of tourist beds in Dubbo and Mudgee.* *This shortage/competition will be particularly evident during the construction phase which coincides with the peak construction periods of several other SSD projects in the region that are either approved or in the assessment/consultation phase, with more projects being planned every day aiming to meet the objectives of the Renewable Energy Zone, including:* • *Wollar Solar (400 workers)* • *Stubbo Solar Farm (400 workers)* • *Burrendong Wind Farm (450 workers)* • *Barney's Reef Wind Farm (340 workers)* • *Bellambi Heights Solar (400 workers)* • *Birriwa Solar Farm (800 workers)* • *Valley of the Winds Farm (400 workers)* • *Central-West Orana REZ Transmission Project (workers 650)* • *Liverpool Range Wind (800 workers)* • *Uungala Wind (250 Workers)* • *Bowdens Silver (320 workers)* • *Local Coal Mine expansions (250 workers).* *In total, the projects above require up to 5,460 workers with the majority needing to be housed in the Mid-Western Region LGA and does not account for the workforces of additional significant projects such other mine expansions, the Inland Rail and other significant local construction projects approved by Council or surrounding LGAs. Considering this, Council strongly objects to the utilisation of tourism accommodation within the Mid-Western Region. Despite Council raising this issue with many State Significant proponents the issue remains unresolved, and yet more projects are being approved – with no solution.*

As mentioned earlier, RES consulted with Mid-Western Regional Council during the preparation of the Submissions Report to discuss the concerns raised in their submission, particularly in regard to the workforce accommodation. The details of consultation undertaken with Mid-Western Regional Council are provided in Section 5 of the Amendment Report.

In line with Mid-Western Regional Council's feedback, RES developed an Accommodation and Employment Strategy (AES). A copy of the AES is provided in Appendix 5 of the Amendment Report. The AES identified that, based on current conditions, there is limited availability of short- and long-term accommodation in the region, especially when considering other approved and/or proposed renewable projects within the REZ. The AES therefore proposed that a TWA facility is required for the Project to accommodate the proposed workforce (up to 400 workers for the full construction period of up to 36 months). The AES further proposed that the TWA facility would need to be self-sufficient in supplying services and utilities such as electricity, water supply and waste removal. This was supported by advice from the Mid-Western Regional Council.

As part of the AES development, RES investigated potential sites for a TWA facility within and/or near the Project Area. Design and environmental constraints considered in the siting of the TWA facility are described in Section 5.3 of the AES (provided in Appendix 5). The preferred site for the TWA facility is located within the south-east corner of the Project Area, as shown on **Figure 3.1**.

Accordingly, the Amended Project includes a purpose-built TWA facility of approximately 4 ha within the Project Area to accommodate 400 workers for the duration of the construction period. Refer to Section 3 of the Amendment Report for further detail on the proposed TWA facility.

Social Impact Management Plan – Medical Services
The Social Impact Study and Cumulative Impact Study for Tallawang Solar Farm notes access to health care as being of likely high impact to communities within the Mid-Western LGA. Brief consultation with three medical centres in the area identified that access to Telehealth for the transient workforce during the construction phase of the Tallawang project would help to ease an already burdened primary health care system in the area. It is well known that medical staff are difficult to recruit and retain within the LGA. New patients are currently not being accepted at Southside Medical Centre Mudgee for at least 3-6 months which is causing an increase in presentations to Mudgee Medical Centre and Gulgong Medical Practice where capacity cannot keep up with demand. *We request RES to consider providing accessible GP and allied health care to its construction workforce, so that no further demand is placed on the current medical practices. A private Telehealth contract may be considered predominantly for minor acute matters such as securing medical certificates, filling scripts, common ailments requiring non-hospital based care and other matters such as psychology, counselling and access to mental health care.*

In line with Council's request, RES is committed to provide an accessible GP and/or nurse for the Tallawang workforce during the construction period, so that no further demand is placed on the current medical practices in and around Gulgong and Mudgee. This measure is outlined in Section 7 of the Amendment Report.

4.12.5 Agriculture

Agriculture
The EIS indicates that the subject site is classified Class 3 - 6 under the land and soil capability assessment scheme. It is important to note that as the Mid-Western Region has no Class 1 land and only a small amount of Class 2 land, classes 3-6 have greater agricultural value within the Region compared to other regions. Council requests an economic analysis be provided to demonstrate the impact of removing 1,370 ha of valuable agricultural land from the local economy, as this has not been included within the EIS.

A detailed Soil, Land and Agriculture Assessment was completed as part of the EIS (Appendix 8 of the EIS). This involved:

- Desktop review of regional mapping to assess soil and landscape baseline data relevant to the Project.
- A soil survey, including field sampling and in-situ soils classification in reference to the Australian Soil and Land Survey Field Handbook (2009) and The Australian Soil Classification (Isbell, 2016).
- Land and Soil Capability (LSC) assessment in accordance with The Land and Soil Capability Assessment Scheme; Second approximation (DPIE, 2012) (the LSC Guideline) to establish the limitations to the land and the likelihood of degradation under eight hazards. Following an assessment of each site and soil profile against the eight identified hazards, the results were used to establish the LSC of each site.
- Biophysical Strategic Agricultural Land (BSAL) verification assessment to verify the regional mapping of the identified BSAL area.
- Land Use Conflict Risk Assessment (LUCRA) in accordance with the Land Use Conflict Risk Assessment Guide (2011) fact sheet provided by the NSW DPI.
- Consultation with neighbouring landholders as part of the LUCRA. In addition, a meeting was held with the Department of Primary Industry (DPI) – Agriculture on 30 November 2021 to introduce the Project and present the draft outcomes of the LUCRA.

4.12.5.1 Land and Soil Capability (LSC)

The EIS identified that based on regional mapping, the Project Area is classified as Class 3 to 6 under the land and soil capability (LSC) assessment scheme. However, the soil survey program and verification assessment completed as part of the Soil, Land and Agriculture Assessment (see Appendix 8 of the EIS) verified that the area of mapped Class 3 land within the Project Area is poor in soil fertility with evidence of waterlogging (mottling / gleying) and some areas of sodic soils. In addition, the landholder of this land has indicated that during their ownership (since 2011) the area mapped as Class 3 land has not been cropped or cultivated as the size, terrain and higher erosion occurring is not in favour of cropping. The landholder further indicated that the property in its entirety is utilised for grazing, except for treed areas.

Based on the above, most of the Project Area was identified as LSC Class 4, with some areas of LSC Class 6. No LSC Class 3 land was identified within the Project Area following the LSC verification assessment.

4.12.5.2 Economic Assessment

The EIS concluded that the Project would impact agricultural productivity within the Project Area by removing approximately 400 ha of marginal cropping land from production and remove cattle grazing from the Project Area. It is expected that these impacts would reduce once the Project is operational, with the entire Project Area being able to support sheep grazing activities.

To calculate the approximate monetary impact to agricultural productivity, a review of the indicative $/ha values for selected commodities (grazing and cropping) were calculated through utilising land use data available from the Australian Bureau of Statistics (ABS), the 2020–21 agricultural census and agricultural productivity data from the Australian Agricultural Census 2020–21. The indicative values provide a general indication of land productivity for agricultural land use and potential impacts on agricultural productivity associated with the Project. The calculated value range for cropping ranges from $426.77/ha (cereals e.g. wheat and barley) to $1206/ha (other crops e.g. canola). For the purposes of the calculations below an average of $816/ha has been assumed. This is considered conservative and is likely to be much less. The grazing production figure used is based on $151.22–$262.78/ha from Australian Agricultural Census 2015–16.

Based on this value range for cropping, the following productivity estimates are made:

- Productivity of approximately $326,400 for cropped land (400 ha).
- Productivity of between $136,098 to $236,502 (covering 900 ha representing the balance of land within the Project Area).
- A total range of $462,498 to $562,902 in annual productivity across the entire Project Area (1300 ha) was calculated.

It should be noted that these calculations are not averages and did not consider years of climatic weather conditions, such as drought, where on farm income can be significantly reduced (such as the 2017–2020 drought) through no or reduced cropping and significantly reduced carrying capacity for livestock. Years following drought also can reduce productivity as farms recover.

On a regional basis (Mid-Western Regional LGA) the economic output for agriculture was $88 million for the MWRC LGA (refer to Australian Agricultural Census 2020–21 visualisations – LGA - DAFF (agriculture.gov.au)).

Based on this regional productivity and assuming no further agricultural activities would continue at the Project Area (noting sheep grazing will continue), this would result in between 0.52% to 0.67% (approximately) in lost agricultural production in the region.

It is not expected that land capability of the Project Area will be impacted as a result of the Project, rather access to this land for more intensive agriculture would be temporarily impacted. Following decommissioning, there will be an opportunity to return the land to the previous level of productivity.

Sheep Grazing Vegetation Management Plan
Can RES please include how they will ensure sheep safety while grazing within the solar farm as per the "Australian Guide to Agrisolar for large scale Solar 2021'. Reference is made particularly to previous known incidents where sheep's wool has become entangled within motor units and moving parts of the solar arrays causing serious injury/death or horns have become entangled in cables which has led to incidences of strangulation. Measures such as motor guards and ensuring conduit over cables as well as standard sheep welfare measures should be included as part of the Sheep Grazing VMP provided to Council.

RES will further develop and implement an OEMP which will incorporate a Sheep Grazing Vegetation Management Plan (SGVMP) that will outline management measures for solar grazing in line with the Agrisolar Guide 2021 as well as other animal health and welfare standards and guidelines. This will include measures to manage the stock appropriately, including a requirement to keep the stock in good health, ensuring frequent shearing (to keep wool growth low), ensure mustering is conducted in an agreed safe manner, and that any fatalities are managed by the farmer. The OEMP will also detail requirements to manage erosion, soil fertility and compaction during the operation of the Project. The OEMP will be developed in consultation with the host landholders and DPI Agriculture.

RES will enter into a grazing agreement (agistment contract) with the relevant host landholders to allow the opportunity for dual use of the Project Area.

The rehabilitation of the Project Area will be conducted in accordance with the Social and Environmental Sustainability Plan (refer to Appendix 17 of the Amendment Report) to be prepared as part of the OEMP for the Project.

4.12.6 Waste

Waste
The EIS notes that the Gulgong, Mudgee and Kandos Waste Facilities have been identified as potentially available facilities for the disposal or management of wastes. In this regard, Council wishes to advise that none of the referenced facilities are appropriate or capable to handle the disposal of wastes generated by the project. *Gulgong and Kandos Waste Facilities are not landfill facilities, accepting mainly general residential type wastes such as household garbage, paper and cardboard. Further, all material deposited at these facilities are transported to Mudgee's Waste Facility. The Mudgee Waste Facility has no capacity to take large quantities of material likely to be generated by the project as the capacity of the existing Waste Cell is almost exhausted.* *Despite the matter being raised with previous State Significant proponents, waste continues to be delivered to Mudgee Waste Facility. If this continues, the existing cells capacity at the Waste Facility will be quickly exhausted. This will require Council to prematurely expand/develop new cells, much earlier than budgeted/planned - which has significant cost implications to Council, and its ability to adequately service its residents.* *Council requests that a condition be placed on the consent, stipulating that no waste derived from the development is to be disposed of at any of Council's Waste Facilities, including Mudgee Waste Facility.*

RES acknowledges the concerns raised by Council regarding waste generation from the Project and the current position on Council's Waste Facilities. Since the exhibition of the EIS, RES has continued to consult with Council regarding this matter. As part of the Amendment Report, RES has investigated other options for solid waste removal to landfill and have consulted with Dubbo Regional Council in this regard. The details of consultation undertaken with Dubbo Regional Council are provided in Section 5 of the Amendment Report. The potential use of waste transfer and recycling facilities available in other LGAs within the broader regional may also be sought to achieve their waste management objectives.

RES is committed to the implementation of waste management strategies in accordance with the *Waste Avoidance Resource Recovery Act 2001*, where emphasis is placed upon reduce, reuse, recycle prior to disposal of its wastes. Wastes that are unable to be re-used or recycled will be disposed of off-site at an EPA approved waste management facility following classification.

EnergyCo (Energy Corporation of NSW, 2023a) recently carried out a study to understand waste generation from projects in the CWO-REZ and identify opportunities to promote efficient waste management and circular economy. The study indicated that there are 10 EPA licensed facilities in the CWO-REZ that are capable of storing, processing and disposing waste. However, there is a lack of facilities equipped for secondary processing and manufacturing of waste materials. In relation to the existing waste facilities in the CWO-REZ, the study found:

- there is sufficient landfill capacity to handle the non-recyclable waste generated by the establishment of the CWO-REZ
- non-organic recyclables generated from construction of the CWO-REZ (i.e. metal, paper, cardboard, plastics and timber) would need to be transported to Newcastle or Sydney, or local capability would need to be developed for it to be reprocessed
- if proponents undertake on-site sorting and communicate with manufacturers (especially for solar projects) to minimise the use of non-recyclables in their packaging, existing facilities can manage the additional waste generated by the CWO-REZ and will not require upgrading.

As outlined in the EIS, RES will develop and implement a detailed Waste Management Plan (WMP) in consultation with DPHI and Mid-Western Regional Council prior to construction, should the Project be approved. The WMP will include but not be limited to:

- a summary of the waste types, classification and estimated annual quantities of wastes produced during the construction of the Project
- measures to managed waste disposal in accordance with the principles of the waste hierarchy, with emphasis on reduce, reuse, recycle prior to disposal of its wastes
- the procedure for assessing, classifying and storing waste in accordance with the EPA's Waste Classification Guidelines (EPA, 2014) and management options
- procedures for storage, transport and disposal of waste
- monitoring, record keeping and reporting, such as waste tracking data demonstrating the lawful disposal of contaminated products, waste or residues generated at the facility.

RES will continue to consult with Mid-Western Regional Council and Dubbo Regional Council regarding waste management.

4.12.7 Visual Amenity

Visual Amenity
The proposal is said to affect the visual amenity of approximately 27 residential dwellings. Of particular concern, Flirtation Hill a core component of the Gulgong Heritage Conservation Area is to be impacted by several other renewable projects within the LGA. Council request that the proponent provide further assessment of the perceived impact to visual amenity considering the cumulative impacts of the proposed development combines with all other renewable energy projects within the locality.

The Landscape and Visual Impact Assessment (LVIA) undertaken by Envisage as part of the EIS for the Project (refer to Appendix 14 of the EIS) included an assessment of cumulative visual impacts on Flirtation Hill. The LVIA acknowledged that from Flirtation Hill, Beryl, Stubbo and Tallawang solar farms would potentially be in view however, the three would not be visible from the same viewing position. There is a large physical separation between the solar farms, and generally they would vary in distance from the viewer and appear different in scale. Given the visual characteristics of solar farms (being dark in colour, relatively low-profile, and the prevalence of intervening existing stands of vegetation), the VIA concluded that their combined effect is unlikely to significantly change the scenic quality of the view.

An Addendum to the LVIA was prepared for the Amended Project (refer to Appendix 9 of the Amendment Report) and provides an updated assessment of the cumulative visual impact to Flirtation Hill. The LVIA Addendum noted that although the Amended Project would not notably exacerbate the cumulative visual impact of the Tallawang Solar Farm (as previously identified in the LVIA), there have been changes to other planned renewable energy developments in the surrounding area which would affect the cumulative visual impact of the Tallawang Solar Farm. Since exhibition of the EIS, six additional renewable energy developments are being proposed within 35 km of the Tallawang Solar Farm.

The LVIA Addendum found there would be potential views of six developments (including Tallawang Solar Farm) from Flirtation Hill, with four seen within the same viewing position. **Table 4.1** summarises the cumulative visual impact to Flirtation Hill (VP246). A photomontage of the potential vies from Flirtation Hill (VP246) is included in Appendix 9 of the Amendment Report.

Table 4.1 Description of Cumulative Visual Impact to VP246: Flirtation Hill

Developments Potentially Visible	Description	Cumulative Visual Impact
Proposed • Tallawang Solar Farm • Bellambi Heights BESS • Mayfair Solar Farm • Mavis Solar Farm. ***Approved*** • Stubbo Solar Farm. ***Operational*** • Beryl Solar Farm.	• Views of the Beryl BESS are not expected from Gulgong or any lookout areas. However, the adjoining, existing Beryl Solar Farm is seen in views to the west from the lookout, and Stubbo Solar farm (under construction) in views to the north. Neither solar farm is seen from the same viewing position as Tallawang Solar Farm (which is to the north-west). The viewer would need to physically relocate to a different spot at the lookout, to view Stubbo, Tallawang and Beryl Solar Farms in turn. • In the same view as Tallawang Solar Farm, however, would appear the proposed Bellambi Heights BESS, Mayfield Solar Farm, and Mavis Solar Farm. The two solar farms would be visible in the foreground of Tallawang Solar Farm. Proposed Bellambi Heights BESS would also be in the same view, to the south of Tallawang Solar Farm. The cumulative view from Flirtation has been illustrated in an updated LVIA photomontage shown at Appendix B (photomontage of VP246: Flirtation Hill, Gulgong).	If all six developments proceed, the extent of renewable energy infrastructure visible from Flirtation Hill would increase, with four developments potentially appearing in the same view. However, when viewed from the distant, elevated vantage point of Flirtation Hill the dark solar panel colour would be recessive and relatively inconspicuous within the surrounding landscape (of darker vegetation and background ridges), and not dominant in the view. Bellambi BESS, however, may be more visible due to the lighter colour of the BESS units contrasting against the darker vegetated background.

4.12.8 Decommissioning

Decomissioning and Rehabilitation
Council requests a decommissioning and site restoration plan be provided. Such a plan should be prepared and conditioned to include the following, at a minimum: • *The anticipated present value cost of decommissioning works, along with an explanation of the calculation of that cost (including a buffer for changes in market values/ inflation).* • *The physical plan for decommissioning, prepared or certified by an engineer, confirming that full remediation/ restoration of the site to its former primary production use/ class land capability is possible.* • *Commitment to a financial security to cover the cost of decommissioning.* • *Management and waste reduction initiatives as to where generated waste will be disposed and/or recycled, without impacting on local waste facilities and in accordance with:* • *Protection of the Environment Operations Act 1997* • *Protection of the Environment Operations (Waste) Regulation 2014* • *Waste Avoidance and Resource Recovery Act 2001* • *NSW Environment Protection Authority (EPA) Waste Classification Guidelines* *Ideally, the above information should be updated every 5 - 7 years to keep up with changes.*

Decomissioning and Rehabilitation
Further, it is noted in the final EIS that the project complies with Ecologically Sustainable Development in that "The Project would benefit future generations by reducing the reliance on energy sources derived from non-renewable resources, which produce GHG emissions." (Umwelt, 2022, p.206). And that "Once decommissioned, the land within the development footprint can be rehabilitated to its current use if required thereby allowing for either continuation of renewable energy generation or a return to agricultural production, both of which would provide benefits for future generations." The EP&A Act requires the consent authority to consider matters of relevance to the public interest. Matters of public interest have been held to include intergenerational equity. Inclusion of a designated "Rehabilitation Fund" held in trust to ensure that future generations can financially provide for the rehabilitation of the Tallawang Site following decommission should be included in the RMP to satisfy the EP&A Act requirement to include intergenerational equity and "that current and future generations should live in an environment that is of the same or improved quality than the one that is inherited."(Umwelt, 2022, p.204).

A draft Social and Environmental Sustainability Plan has been prepared and is provided in Appendix 17 of the Amendment Report. The plan will be reviewed and updated, in consultation with the Mid Western Regional Council and DPHI, should the Project be approved.

4.12.9 Community Consultation

Community Consultation
Council requests that community consultation is ongoing to ensure that the community has current and accurate information about the project and to provide feedback on the proposed project including traffic, construction or social impacts. As such, consultation should include the provided impact area including Mudgee where the proponent proposes to source and house workers.

As outlined in Section 5 of the Amendment Report, RES has continued to consult with landholders and the community more broadly following the exhibition of the EIS.

4.12.10 Biodiversity

Biodiversity Management Plan
It is noted that the proponent (RES) is required to enter into the BOS and they have a number of ways in which they may do this. RES have not made a decision as yet as to where they would direct biodiversity offsets but would prefer land based offsets through Stewardship agreements rather than retiring biodiversity credits. Council are planning on taking part in the National Recovery Plan for the listed Koala (subject to grant funding) and it would be highly regarded if RES were to consider direct biodiversity offsets within the MWRC LGA, to be negotiated at a later date, to enhance this long term and broad scale project. Other options could include restoring, enhancing and reconnecting CEEC White box-Yellow box-Blakelys red gum Woodland and EEC Grey box Grassy Woodland within the Mid-Western Region LGA through joint planting, weed control and seed collection initiatives with MWRC. Further consultation would be welcome. *Vegetation screening of perimeter fences has been noted of importance in the Social and Visual Impact Assessments. Vegetation screening could provide connectivity between fragmented patches of Endangered Ecological Communities, corridors for native wildlife and the establishment of an ongoing seed bank. Inclusion of a vegetation screening plan in the BMP would be highly regarded by council. Council should be consulted for guidance on a suitable species palate and assistance with sourcing endemic tube stock.* *Inclusion of nest boxes particular to the impacted threatened arboreal fauna species, spotted tailed Quoll, within the remnant woodland of the proposed footprint could help to mitigate feral animal predation for any wildlife which manages to scale the security fencing into the solar farm.*

Biodiversity Management Plan
Inclusion of nest boxes particular to threatened avian and bat species Regent Honeyeater, Large eared Pied Bat and Corben's Long-eared Bat within the remnant woodland of the proposed footprint could also help to provide connectivity and refuge for wildlife and mitigate the impact of fragmentation of habitat.

The comment from Mid-Western Regional Council is noted. A commitment to prepare and implement a Biodiversity Management Plan should the Project be approved, is included as a management measure in the EIS (refer to Section 8.1 and Appendix 18).

As outlined in **Section 3.1**, the security fence for the Amended Project has been realigned to improve wildlife connectivity through the Project Area. The revised design removes fencing from around much of the native vegetation to be retained on site and provides an open corridor between the northern and western boundaries (refer to **Figure 3.1**).

The concept landscape plan included in the EIS has been updated to take account of the Amended Project and is provided in the LVIA Addendum (refer to Appendix 9 of the Amendment Report). The updated concept landscape plan includes:

- only native vegetation, common to the area (which have been sourced from Watershed Landcare Incorporated's Native Species Revegetation – A guide for the Mid Western Regional Council area)
- a multi-level screening strategy (with grasses, shrubs and trees)
- a guide for planting and maintenance to ensure plant survival and reasonable growth (which is to be developed when the detailed landscape plan is prepared prior to construction).

A detailed landscape plan would be prepared in a later detailed design stage once the Engineering Procurement and Construction contractor is finalising the layout of the Project. The detailed landscape plan would be prepared prior to landscape implementation which would refine the concept landscape plan.

4.12.11 Infrastructure

Engineering Conditions
1. *Figure 4.1 & 4.2; Jacksons Lane intersection concept - proposed upgrade of Jacksons Ln to site access point is currently shown as unsealed. Council will require this section to be two coat sealed. Conditions will require;* a) *Prior to the issue of construction certificate, the Applicant must submit design plans to the satisfaction of the relevant roads authority which demonstrate that the proposed accesses to the development are designed to accommodate the turning path of the longest vehicle entering and exiting the site.* b) *The Applicant must complete the road infrastructure upgrade works approved under SSD conditions to the satisfaction of Council. Note: The Applicant must obtain approval for the works under section 138 of the Roads Act 1993.* 2. *Prior to the commencement of any construction, the Applicant must:* a) *Consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;* b) *Prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, drainage); and* c) *Submit a copy of the dilapidation report to the Planning Secretary, Certifier and Council.*

Engineering Conditions
3. *Protection of public infrastructure - Unless the Applicant and the applicable authority agree otherwise, the Applicant must:* a) *Repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development, including excessive wear and tear to roads; and* b) *Relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development.* 4. *Protection of property - unless the Applicant and the applicable owner agree otherwise, the Applicant must repair, or pay the full costs associated with repairing any property that is damaged by carrying out the development.* 5. *As workforce accommodation has not been established the workforce transport plan is not in place. Depending on where workforce is to be located future engineering conditions may be necessary depending on routes agreed.*

As mentioned above, RES has continued to consult with Mid-Western Regional Council since the exhibition of the EIS to discuss their submission (refer to Section 5 of the Amendment Report for further details).

Further, as discussed in Section 6.6.3 of the EIS, should the Project be approved, RES will prepare road dilapidation reports covering pavement, drainage and bridge structures in consultation with Transport for NSW and the local Council for the proposed transport routes before and after construction. Regular inspection regimes undertaken in consultation between local Councils and the Proponent would be developed. Any damage resulting from construction traffic, except that resulting from normal wear and tear, would be repaired to pre-existing conditions.

4.12.12 Wastewater

Sewerage Disposal
It is recognised that sewage will be pumped out and disposed of at a Mid-Western Regional Council facility. Council would need to confirm staging and estimated construction staff to calculate whether Gulgong Sewage Treatment Plant have capacity to accept this additional inflow. Council request the proponent consult with Council in regard to this matter prior to determination. However, it is possible the treatment facilities will not have adequate capacity to take in waste.

As mentioned above, RES has continued to consult with Mid-Western Regional Council regarding the concerns raised in their submission. Based on advice provided by Mid-Western Regional Council during the development of the AES, the proposed TWA facility will include an onsite sewage treatment plant (secondary treatment and overland disposal of sewage via irrigation). This is further detailed in Section 3 of the Amendment Report. An assessment of the potential impacts associated with the onsite sewage treatment plant is provided in Section 6 of the Amendment Report.

It is likely that a septic system would be installed for the operational amenities. This would be constructed and managed in accordance with the relevant Mid-Western Regional Council requirements.

4.12.13 Water Supply

Water Supply
Council request a quality assurance program (QAP) for the treatment and provision of water to workers is provided. If the proponent wishes to draw from Council's water supply consultation with Council in regards to this matter is required prior to determination. The proponent further notes water will be sourced via a local provider. Council seeks clarification as to who the provider will be and notes the use of Council supplied local portable water is not supported.

RES has commissioned icubed Consulting to investigate the construction and operational water demands as well as suitable water supply options for the Amended Project. The Water Resource Assessment from icubed is provided as part of the Amended Water Resources Impact Assessment (WRIA) completed by Umwelt (refer to Appendix 12 of the Amendment Report). A draft quality assurance program (QAP) for the treatment and provision of water to the construction workforce has been completed and is available in the Water Resource Assessment from icubed included in Appendix 12 of the Amendment Report.

The following water supply options have been investigated by icubed:

- **Potable water** – Ulan Water is located approximately 30 minutes from the Project Area and has been identified as the local contract supplier. Initial discussion with Ulan Water has confirmed that potable water supply is available with quantities dependent on timing, supply and availability.
- **Non-potable water** – the following options are available:
    - Ulan Water is available for non-potable water supply. Initial discussion with Ulan Water confirmed that non-potable water supply is available with quantities dependent on timing supply and availability.
    - Sourcing treated grey water and recycled wastewater.
    - Onsite boreholes and property owners' dams. One groundwater bore (GW0805247) is located within the Project Area adjacent to and east of Castlereagh Highway. The bore is described as being drilled to 42 m in depth and for stock and domestic water supply purposes. The last recorded groundwater depth was recorded as 12 m below ground on 15/02/2013 (WaterNSW, 2024a).
    - Local dams owned by property owners. The maximum harvestable right for all dams within the Project Area was estimated to be 91 ML, making on-site storage a viable option.

In addition, options for water conservation, specifically alternatives and initiatives to minimise potable and non-potable water demand, were investigated. Initiatives included the use of polymers in dust suppression, rainwater collection, employing recycled water in construction, leak detection and repair, and implementing education and awareness programs to promote responsible water usage among workers. Overall, by implementing these alternatives and initiatives, the Tallawang Solar Farm can significantly reduce water demand, conserve water resources, and promote sustainable water practices.

4.12.14 Voluntary Planning Agreements

Voluntary Planning Agreements
Council notes under 2.4.6 of the EIS that RES have not proposed to enter into a voluntary planning agreement (VPA) with Mid-Western Regional Council. Council strongly opposes this and suggests a VPA is appropriate. The identified Community Shared Benefit Strategy identifies initiatives such as; the upgrading of roads, installment of playgrounds, improvement of sports fields and investment in aquatic centers, these are typically types of infrastructure funded and delivered by Council. Such amenities are not typically funded by private bodies as they have ongoing maintenance cost and risk mitigation responsibilities. A more appropriate means to deliver the identified initiatives would be through a VPA with Council. Further, the project will increase burden on residents across the entire LGA and on Council resources including roads and other infrastructure. It is therefore fair that Council seeks a direct Planning Agreement that will acknowledge these impacts and rising costs of hosting such developments. Funds raised through Planning Agreements are allocated and utilised for public benefit.

RES has proposed a Voluntary Planning Agreement (VPA) to Mid-Western Regional Council that represents an investment of $850 per MW per annum for the duration of the Project Operational Life (35 years). This is a total investment per annum of $425,000 and indexed to CPI.

4.13 Mining, Exploration and Geoscience

Mining, Exploration and Geoscience
MEG-GSNSW has reviewed the Environmental Impact Statement for the proposed Tallawang Solar Farm and notes the project site is overlapped by Exploration Licences (EL) 8405 and 8160, held by Bowden Silver. MEG-GSNSW acknowledges the EIS includes a summary of consultation that has occurred with the titles' holder. *Bowden Silver responded indicating their support for the Tallawang Solar Farm development to coexist with the mineral exploration licenses, provided that written consent under Section 31(1) of the Mining Act 1992 is provided to Bowdens Silver to conduct mineral exploration activities within the proposed site in both the planning phase of the Tallawang Solar Farm as well as throughout the project's life.* *Bowden Silver notes there are areas of geological interest within the project's boundary that are overlapped by EL 8405 and EL 8160 which Bowdens Silver Pty intends to further explore.* *MEG-GSNSW will continue to liaise with Bowdens and RES Australia to follow up on consultation progress.*

The comment from MEG-GSNSW is noted.

4.14 Warrumbungle Shire Council

4.14.1 Procedural Matters

Overview Comments
There are some ten renewable energy projects (proposed/actual) located wholly or in part in Warrumbungle LGA. Across the Central West Orana REZ ('REZ') overall there are more than 25 proposed/actual renewable energy projects, although Council notes the EIS states the REZ-wide project number currently stands at 32 (page 9). *Whilst Council is generally supportive of renewable energy initiatives, it is unable to make an informed, considered, merit-based decision on the benefits and costs of the Proposal at this time because:* *a) Cumulative impacts arising from this proposal and a number of other proposed or actual State Significant Developments in our LGA and adjacent ones that constitute the REZ have not been adequately considered; and*

Overview Comments
b) There have been no substantive discussions to date about the terms and conditions of a VPA. *It is because of these unresolved and significant matters that Council hereby lodges an **objection** to the Proposal. The prospect of Council subsequently reviewing its objection is dependent on whether the Proponent and OPE actively and substantively engages with Council to address, to Council's written satisfaction, and the concerns listed herein.* *Lodging an objection is not a decision Council takes lightly, however experience suggests that this is the most realistic option available which provides Council with hope that its voice will be heard and acted upon by both the NSW Government and the Developer.* *Subjects of material interest to Council include:* *a) Increased traffic on Shire roads and who pays for the repair costs for the additional wear and tear;* *b) How and where the DIDO/FIFO construction workforce will be accommodated;* *c) Waste volumes and types and their destination - associated with Project construction, replacement of PV modules after 15 - 20 years, the replacement of the battery components after 20 years and the decommissioning of the Project after 35 years of operation;* *d) The environmental, social and economic costs (who bears them?) and benefits (for whom?) as they relate to Warrumbungle Shire, including the adequacy of social infrastructure including health care, policing and emergency services; and* *e) Securing a Planning Agreement.* *Council acknowledges the EIS does attempt to address the likely cumulative impacts however the exercise is hampered by a lack of quantitative data.* *Council urges the OPE, as the State's key planning agency, to expedite the preparation of a comprehensive cumulative impact assessment data-base so all REZ proponents, the State Government and councils can meaningfully progress with planning for the REZ without the local communities bearing the environmental, social and economic costs.*

RES acknowledges that cumulative impacts from the CWO-REZ is one of the key concerns for the Warrumbungle Shire Council and the community more broadly. Since the exhibition of the EIS, RES has continued to consult with Warrumbungle Shire Council to discuss and resolve the concerns raised in their submission, as detailed in Section 5 of the Amendment Report.

The cumulative impact assessment (CIA) presented in the EIS has been updated with reference to the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPHI, 2022). The updated CIA is provided in Section 6 of the Amendment Report.

During 2022, EnergyCo (Energy Corporation of NSW, 2023a) carried out an investigation on the potential cumulative impacts to the communities within the CWO-REZ and how these will be mitigated whilst also providing long-term benefits to the community. The study included an extensive program of engagement with local councils, government agencies and other key stakeholders to understand key local issues and priorities in the REZ. Detailed investigations were undertaken into a number of areas such as road upgrades, training and skills development, workforce accommodation, telecommunication improvements and waste management. The report released in March 2023, summarising research carried out to date, key findings and opportunities, is available on EnergyCo's website.

4.14.2 Traffic Impacts

Road and Traffic Impacts
It is noted that the EIS states: • *Construction material and equipment would be transported from the Port of Newcastle via the Golden Highway and then via the Castlereagh Highway to the Project Area;* • *The predicted average daily traffic generated during the Project's construction phase is estimated at up to 85 heavy vehicles (170 movements per day). Typically, the heavy vehicles would be split into approximately 25% articulated vehicles/ low-loaders and 37.5% each rigid trucks and truck and dog vehicles;* • *During the peak of construction this may extend to 135 heavy vehicles per day (270 movements per day).* • *General heavy vehicle transport could travel from any direction along the surrounding road network depending on origin of the deliveries, e.g. from the south (Gulgong-Mudgee area), west (Dubbo area), north (Dunedoo area) and east (Merriwa area).* • *The delivery trucks will predominantly be Truck and Dog vehicles, with several concrete mixing trucks and Articulated Vehicles. The AVs will occasionally be used to transport larger plant such as the PV panels;* • *One Oversize Over Mass (OSOM) vehicle per day (two OSOM vehicle trips per day) on a designated day, with a maximum of four OSOM vehicles (eight OSOM vehicle trips) over the 34-month construction period;* • *An OSOM vehicle will be required to transport a substation transformer on a 16-axle trailer and is approximately 30 x 4.3 m in length and width. There are expected to be up to two transformers delivered to the Project Area;* • *For the worst-case, traffic generating scenario for light vehicles it has been assumed that construction staff trip distribution would be split equally between the south (Gulgong-Mudgee area), west (Dubbo area), north (Dunedoo area) and east (Merriwa area) resulting in approximately 300 construction staff vehicle trip movements per day from each direction. This assumes 1.8 persons in each vehicle; and* • *Traffic generation during decommissioning is estimated to be approximately 30% less than the traffic generation during construction.* *Council appreciates Table 4.7 in the Transport Impact Appendix which strives to address the cumulative impacts. Council is of the view that worst case traffic scenarios are most likely to become reality, given the multitude of projects and the anticipated constrained timeframes. It is noted that Table 4.7 suggests an almost four-fold increase in traffic on the Golden Highway. Level of Service is just one aspect; another of concern to Council is pavement damage and who pays for repair and maintenance. Such a traffic loading could also have road safety implications.*

The Project's proposed transport route is from the Port of Newcastle (approximately 230 km south-east of the Project area) via Industrial Drive, Pacific Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway and Castlereagh Highway to the Project's access via a local unsealed road directly south of the Project Area.

A short section of the proposed transport route traverses through the Warrumbungle Shire Council LGA (approximately 35 km long section of the Golden Highway and approximately 8 km long section of the Castlereagh Highway). Both highways are approved heavy vehicle routes.

It is expected that the increase in traffic movement on roads through the Warrumbungle Shire Council for a period of 3 years would contribute to the deterioration of the condition of these roads.

As discussed in Section 6.6.3 of the EIS, should the Project be approved, RES will prepare road dilapidation reports covering pavement, drainage and bridge structures in consultation with Transport for NSW and the local Councils for the proposed transport routes before and after construction. Regular inspection regimes undertaken in consultation between local Councils and the Proponent would be developed. Any damage resulting from construction traffic, except that resulting from normal wear and tear, would be repaired to pre-existing conditions.

As noted above, RES has consulted with Warrumbungle Shire Council to discuss concerns raised in their submission, as detailed in Section 5 of the Amendment Report.

Road and Intersection Upgrades and Maintenance
• *It is noted that intersection widening works to accommodate the increased heavy vehicle volumes and OSOM transport vehicles would be required at the Project access at the Jacksons Lane/Castlereagh Highway intersection.* • *Council wishes to have further discussions with the Proponent to define the scope and extent of LGA reading matters as:* • *Road inspection regimes;* • *Road dilapidation reports covering pavement, drainage and bridge structures for the proposed transport routes before and after construction; and* • *A road maintenance program for all affected local roads. Any road pavement damage which occurs during the project construction period will require restoration to its pre-construction condition at the Proponent's cost.*

As noted above, RES has consulted with Warrumbungle Shire Council to discuss concerns raised in their submission, as detailed in Section 5 of the Amendment Report.

Infrastructure Refurbishment Phase Traffic
• *There will be infrastructure and equipment refurbishment (e.g. PV panels and batteries) undertaken during the 30-year life of operations. Council seeks quantification of the scope and extent of that activity, particularly in relation to both traffic and road impacts and workforce variations.*

Traffic generation during operations would be minor. It is proposed that up to seven operational / maintenance staff would service the Project, likely to be based in the surrounding and local areas.

Operational traffic would consist of 4WD-type vehicles travelling within the Project's internal access track network after gaining access off the Castlereagh Highway. It is envisaged that with journey-to-work and home trips, this would amount to a maximum of 20 trips per day, which would occur during peak maintenance periods and on an intermittent basis. This maximum traffic generation would readily be absorbed into the spare capacity of the existing road network.

4.14.3 Social Impact

Construction Workforce Accommodation
The EIS indicates there will be a construction period of 34 months, with an average of 270 construction jobs but up to a peak of 580 over approximately a six-month period. Different renewable energy proponents are expressing different opinions regarding how and where construction workforces will be accommodated. and the scheduling of multiple projects. Council urges the OPE, as the State's planning agency, to 'step up to the plate' as a matter of urgency and undertake a REZ-wide assessment of likely cumulative impacts. In the absence of such critical information Local Government across the REZ is not able to make prudent judgements on such matters. *In the interim, Council seeks discussions with the Proponent in relation to not only its commentary on the topic but also its views of the accommodation commentary in the EIS for the nearby proposed Birriwa Solar Farm, as follows:* *a) Page 98 of the Tallawang EIS suggests 175 non-local employees will need accommodation during the six-month peak. The EIS goes on to state that 'there is adequate capacity within the Study Area to accommodate the number of non-local employees expected at the peak of the construction period, even allowing for increased demand from other regional infrastructure projects and seasonal demands (holiday periods, agricultural activities etc)'.*

Construction Workforce Accommodation

Could the Proponent please explain:

- *how the 175 number (appears to be 30% of the peak workforce?) was determined and the basis for the judgement that there is an 'adequate supply' of commercial accommodation.*
- *reconciling the 175 number with the statement on page 96 of the SIA Report stating that a 'a maximum of 290 construction workers (50% of the peak construction workforce) would require local accommodation to be able to access their place of work on the Project, or 412 people when considered in combination with the adjacent Barneys Reef Wind Farm Project'.*

By way of comment, anecdotally it appears to Council at this time that more than 80% of the REZ-wide construction workforce will need to be non-locals. Based on that assumption it would mean the Tallawang workforce numbers seeking commercial accommodation would range from approximately 216 (average numbers) to 464 (peak numbers).

*b) The Tallawang SIA Report page 84 states 'When considered in combination with the estimated peak construction workforce for the neighbouring Barneys Reef Wind Farm Project (of 245 workers), the predicted temporary population influx into the area of social influence would be a **2.4% population change** (based on the 80% migration scenario), indicating that the cumulative effect of overlapping construction programs between nearby projects is **likely to cause considerable social change to communities hosting the Projects during these years and is therefore ranked a high social impact** (likely to occur with moderate magnitude)'.*

Council agrees with the Tallawang EIS assertion that 'incoming construction workforce may decrease levels of community cohesion in townships and alter local relations, with multiple concurrent and nearby major projects potentially causing greater levels of community division' (page 82 of the SIA Appendix).

Also, could the Proponent please comment on its prediction of a 2.4% population increase due to the influx of construction workers compared with the Birriwa EIS predicting a 15.7% increase - see below. The Birriwa Solar Farm EIS states:

- *70% of its construction workforce will need to be sourced from outside the local area and may have to be accommodated in towns as far away as Dubbo (pages 11 &73 SIA Report);*
- *The REZ-related cumulative population of non-local workers could be in the order of 4,000 people, equivalent to a 15.7% increase in the total population of Mid-Western LGA page 107, SIA Report); and*
- *"assuming the majority of workforces associated with other projects that overlap with the project will be sourced from outside the regional area, then the projected cumulative demand for short-term accommodation and rental accommodation in the regional area will be **extreme** and supplementary accommodation e.g. temporary workforce accommodation village would need to be provided'' (page 107 SIA Report).*

Use of the term "extreme" is considered to be most appropriate in describing the future situation.

Until the Proponent and the NSW Government provide clarity on this key topic, Council is not in a position to make an informed judgement on the merits of the Project, therefore has no option but to object to the proposal on this matter alone.

As discussed in Section 5 of the Amendment Report, RES has continued to consult with the Warrumbungle Shire Council to discuss the concerns raised in their submission.

In line with the submissions from Mid-Western Regional Council and Warrumbungle Shire Council, an Accommodation and Employment Strategy (AES) (refer to Appendix 5 of the Amendment Report) was developed for the Project in consultation with Council, during the preparation of the Submissions Report. The AES identified that, based on current conditions, there is limited availability of short- and long-term accommodation in the region, especially when considering other approved and/or proposed renewable projects within the REZ. The AES therefore proposed that a TWA facility is required for the Project to accommodate the proposed workforce (up to 400 workers for the full construction period of up to 36 months). The AES further proposed that the TWA facility would need to be self-sufficient in supplying services and utilities such as electricity, water supply and waste removal. This was supported by advice from the Mid-Western Regional Council.

Accordingly, the Amended Project includes a purpose-built TWA facility of approximately 5 ha within the Project Area to accommodate 400 workers for the duration of the construction period. Refer to Section 3 of the Amendment report for further detail on the TWA, including an assessment of the associated impacts in Section 6 of the Amendment Report.

An updated Social Impact Assessment (SIA) and updated Economic Impact Assessment (EIA) have been prepared for the Amended Project and is available in Appendix 15 and 16 respectively of the Amendment Report.

4.14.4 Waste

Waste Management
The EIS is silent on the quantums of the various waste streams likely to be generated such as: paper/cardboard (packaging used for the PV modules and tracker components). Based on experience Council suggests there will be several thousand kilograms per week during peak delivery periods; wooden pallets. Again, our experience suggests 1,000-2,000 units per week during peak delivery periods; plus plastics, green waste, soil, electrical, metals, liquid, sewage, MSW and batteries. There is no clear enunciation as to how and where waste will be managed. Again, this is a cumulative impact issue across the REZ that requires a definitive plan before Council can make a judgement on the adequacy of waste management arrangements. To be clear, Council does not have any waste facilities that would be capable of accepting any of the wastes that will be generated from the development.

Estimated waste volumes are presented in Section 6 of the Amendment Report. Refer to **Section 4.12.6** for a detailed response regarding the proposed approach for waste disposal and management.

4.14.5 Voluntary Planning Agreements

Securing Development Contributions via a Planning Agreement
It is noted on page 31 of the EIS that the Proponent does not propose to enter into a Planning Agreement with either Mid-Western Regional Council or Warrumbungle Shire Council. Rather, the Proponent states that 'alternate mechanisms for infrastructure management and/or community benefit may be established within the REZ'. *It goes on to say that the Proponent 'will be developing a community shared benefit strategy with Mid-Western Regional Council and the local community which will likely be administered outside of a VPA'.* *As the Warrumbungle LGA will be impacted by the Proposal (including inter alia increased traffic and road damage and housing construction workers), it requires a Planning Agreement to be negotiated with it prior to any contemplation by the NSW Government of the granting of development approval. In addition, Council requires the Agreement's key terms to be included as a specific condition within any project consent.*

Securing Development Contributions via a Planning Agreement
Local Government is guided by a range of best practice laws, regulations and policies to support them to make prudent decisions that will create positive outcomes for their local communities. *Council seeks development contributions from the Proponent via a Planning Agreement that acknowledges the tangible and intangible environmental, social and economic costs arising from the Proposal. Such funds will be applied to a public purpose that will ensure the provision of a public benefits.* *Council considers that development contributions should be provided to it and it will manage the finances and determine how decisions are made, in accordance with standard practice widely adopted by Councils across rural NSW on many other energy and mining projects.* *Council is however amenable to having an advisory committee comprising local representatives, Council and the Proponent be involved in the funding allocation decision- making process.* *Council remains to be convinced that separate allocations to various community groups via the proposed Community Shared Benefit Program is justified for the following reasons:* *a) As per the provisions of the EP&A Act, a Planning Agreement is secured with the LGA Management. With that comes certain statutory responsibilities and obligations for which Council is liable. Outsourcing Council management responsibilities to the general public, for instance a community group, carries considerable governance and legal risks. Similarly, under the Local Government Act, the Council has statutory obligations that are at odds with outsourcing funds to a community group;* *b) Under the EP&A Act, Council is legally responsible for managing and reporting on the performance of the Planning Agreement in all its facets. These aspects include decision-making for the allocation of funds, the appropriate management of said funds, the performance of projects allocated funding and annual reporting; and* c) *Funds administered by a community group may result in additional assets within the community that the Council is expected to maintain and replace throughout the assets lifecycle. Such assets might not be in accord with Council's four-year Delivery Program and Operational Plan, thus creating an unwanted and unsustainable financial burden on Council.*

As outlined in **Section 4.12.14**, RES has proposed a VPA to Mid Western Regional Council. However due to the limited impacts to Warrumbungle LGA RES is not proposing a VPA to Warrumbungle Shire Council. This was discussed with Warrumbungle Shire Council during further consultation as part of the preparation of this Submissions Report.

4.15 TransGrid

TransGrid
The Environmental Assessments team will need to carry out a due diligence review of the EIS to confirm that all necessary grid connection works are captured. *Property have no further comment and will provide the relevant Property advice to Lumea as part of the project once the customer enters into the relevant connection agreements if not done so already.*

The comment from TransGrid is noted. Consultation with TransGrid commenced in early 2021 and has been ongoing since the submission and exhibition of the EIS as outlined in Section 5 of the Amendment Report.

4.16 EPA

EPA
The EPA recently advised the Department of Planning and Environment (DPE) that it will no longer respond to routine referrals of certain types of planning matters. These include educational establishments, hospitals, medical centres, health research facilities and solar farms. This decision was made to ensure that the EPA is focussing more resources on providing advice on other complex projects. The DPE was advised of this in a letter from the EPA to DPE's Tim Kirby, Director Case Management, dated 21 January 2022. The EPA should only be contacted about these types of developments if you believe that EPA technical expertise on a specific issue is needed.

The comment from EPA is noted.

5.0 Response to Community and Organisation Submissions

As outlined in **Section 2.0**, a total of two organisations and 52 individual community members lodged submissions relating to the Project. A response to the issues raised in these submissions is included in the following sections grouped by theme.

Several of the community submissions received were similar or had consistent themes. Where this is the case, the theme of the concern has been provided in bold in the text boxes below with examples of specific quotes from the submissions to assist the reader, followed by the unique submitter identification number for each quote. Specific issues, that is, where an issue was raised only once, have also been addressed.

5.1 Environment, Social and Economic

A total of 50 submissions were received that relate to the economic, environment and social impacts of the Project.

5.1.1 Agriculture

Issues relating to agriculture were raised in 28 submissions.

Loss of prime agricultural land
'Stop ruining farmland' S-50549228
'This is prime agricultural land, why reduce the amount of productive agricultural land that can provide food and fiber for the country. Surely, placing these enormous projects on poorer quality country that isn't able to be farmed and provide a living for people makes more sense.' S-50679967
'Good agricultural land is being wasted for this project' S-50733477
'I object to this project because it is on prime agricultural land in a mixed farming area.' S-50787206
'Solar farms need to be on poorer land not good farming land' S-50930957
'Fertile, productive farmland taken away, resulting in a loss of much needed agricultural produce as well as loss of income for many farming families.' S-50986206
'Loss of rich farming land and associated jobs in exchange of temporary jobs and industrial outlook.' S-50995223 and S-51164544
'I object to the Tallawang Solar Electricity Generating Works proposal because of the hundreds of square kilometers of productive farmland lost along with the associated impact on food production.' S-51022010
'*Permanent loss of good sheep grazing land.'* S-51026223, S-51028218 and S-51035457
'The location proposed for the Tallawang Solar Farm has high alternative value as land: that is agriculturally productive;' S-51089212
'1370 hectares of productive agricultural land is being removed for the purpose of this solar farm.' S-51211472
'The wasted use of limited cleared fertile farming land for non-agricultural use.' S-51217975
'*This is another project taking away agricultural land from our communities. This EIS talks about the agricultural class of land, regardless of the class, this land has current and future potential to deliver important economic contributions to our communities. The class of land means the stock carrying capacity is different, but it doesn't mean it does not have agricultural value.*' S-51227456

Loss of prime agricultural land
'Despite the large size of Australia it only has 6% arable land. But this is being reduced by each wind, solar, BESS and pumped hydro project, which almost invariably are being built on agricultural land, as proposed in this case. The proponent appears to think land that is used primarily for cropping and grazing is somehow inferior to just covering the land with "glass". Cropping and grazing puts food on the table of most Australians as well as exporting to other countries. Continual loss of this land threatens the livelihood of people in agricultural towns, Australia's long-term ability to feed our growing population and that of other parts of the world. It poses a significant security risk to our country if we become dependent on others to feed us. This project proposal would occupy/destroy large areas of arable land and therefore add to the problem of diminishing agricultural land that could otherwise feed the generations of Australians to come and other people globally. The DPE must take action to prevent the increasing loss of agricultural land by not approving this and similar projects.' S-51070711
'I object to the Tallawang Solar Electricity Generating Works proposal because it is a very poor use of productive agricultural land, which we need to be able to produce food for current and future generations of Australians.' S-51071212
'It is an offence to the many farming communities who provide for our country to have such valuable farming land fragmented for the benefit of so many living in the cities who consume the most power. Australia has such large areas of poor quality soils & yet the government planners in their haste for the quick fix are destroying our productive farmlands.' S-51227708

A detailed Soil, Land and Agriculture Assessment was completed as part of the EIS (Appendix 8 of the EIS) and identified that, based on regional mapping, the majority of the Project Area is inherently "moderately low" fertility land (i.e. LSC 5) with a small portion (approximately 73 ha) 'moderately high' fertility land (i.e. LSC 3) under the NSW *Land and Soil Capability (LSC) Assessment Scheme*. The LSC 3 area is also regionally mapped as Biophysical Strategic Agricultural Land (BSAL) and as such indicating that it has high quality soil and water resources capable of sustaining high levels of productivity.

A soil survey program and LSC verification assessment were completed as part of the Soil, Land and Agriculture Assessment (see Appendix 8 of the EIS) to verify the LSC classification within the Project Area. The findings indicated that the area of Land Class 3 is poor in soil fertility with evidence of waterlogging (mottling / gleying) and some areas of sodic soils. In addition, the landholder of this land has indicated that during their ownership (since 2011) the area mapped as Class 3 land has not been cropped or cultivated as the size, terrain and higher erosion occurring is not in favour of cropping. The landholder further indicated that the property in its entirety is utilised for grazing, except for treed areas.

Based on the above, most of the Project Area was therefore verified to be Class 4 land, with some areas of Class 6 land. No Class 3 land was identified within the Project Area following the LSC verification assessment.

Furthermore, once construction has been completed there would be an opportunity to maximise the Project's potential and offer a dual purpose for the Project Area allowing the area to be grazed by livestock, in particular sheep. The *Australian Guide to Agrisolar for Large-Scale Solar*, for proponents and farmers (Agrisolar Guide 2021) was prepared by the Clean Energy Council (March 2021) to act as a guide for to co-sharing of agriculture and solar farming in Australian.

The Agrisolar Guide 2021 identified that there were at least 13 large-scale solar farms successfully grazing sheep (identified as 'solar grazing') in Australia in 2020 and identified a number of successfully trialled positive benefits including.

- Sheep would help control vegetation growth within the Project Area, reducing the need for mowing or spraying, which will reduce grass fire risks in the area.
- Maintenance costs are also reduced as result of vegetation being controlled by sheep.
- Animal welfare conditions are improved, with
    - the solar panels providing shade and protection from strong winds for sheep resulting in higher quality wool
    - safety from predators is enhanced by the installation of secure boundary fencing
    - cover provided by the panels improves safety from wedge-tailed eagles.

The Agrisolar Guide 2021 provides a number of recommendations to ensure land sharing success, these recommendations will be incorporated into the OEMP to be prepared for the Project. This will include measures for managing stock (sheep), including a requirement to keep the stock in good health, ensuring frequent shearing (to keep wool growth low), ensure mustering is conducted in an agreed safe manner, and that any fatalities are managed by the farmer.

Impacts to Soil
'Apart from removing land from productive farming for up to 35 years there is the likely long-term damage to the soil. The long term impact to the soil (from compaction and potentially leaching of toxic chemicals into the soil) could ruin its ability to be productive farmland in the future.' S-50980956

Despite the large amount of information circulating about solar panels being toxic, modern crystalline silicon solar panels contain no toxic materials. The claims of toxic solar panels come from the mostly obsolete thin-film (Cadmium telluride – CdTe) solar panels which did contain trace amounts of cadmium and telluride. However, unless these (relatively rare) panels are broken up into fragments, the trace amount of cadmium is contained within the layers and cannot leach out.

There is no clear evidence that the leaching of toxic elements from solar panels during the operational phase is an environmental issue in Australia or abroad. For example, a study published in 2019 in the *Journal of Natural Resources and Development* examined soil samples from beneath operational crystalline silicon photovoltaic modules and from adjacent, module-free environments, and then compared bioavailable element concentrations between these samples. The study concluded that, despite concentration differences for some elements in the two sample locations, no elements were, on average, present in concentrations that would pose a risk to nearby ecosystems. The authors concluded that photovoltaic systems thus remain a cleaner alternative to traditional energy sources, such as coal, especially during the operation of these energy production systems (Robinson and Meindl, 2019).

Although there are a number of materials used in the manufacture of PV modules that are considered toxic, 'for intact PV panels, leaching of these elements is unlikely to occur' because they are encased in a number of protective layers (Robinson and Meindl, 2019). During the manufacturing process of a solar panel, the PV cells are typically encapsulated in a clear hardened resin with strengthened glass protecting the front side, as well as a back side made from a polymer (Clean Energy Reviews, 2020). The completed panel is then further protected by an aluminium frame. These features protect the panel from the environment including extremes in temperature, rainfall, hail and humidity (Clean Energy Reviews, 2020). A robust design,

combined with a standard 25-year warranty ensures that the likelihood of cell material being exposed to the environment is very low.

Nonetheless, the following procedures would be adopted to ensure that, firstly, panels are unlikely to become structurally compromised, and secondly, if panels do become compromised, potential environmental effects will be avoided:

- Due Diligence Process – As a minimum, panels will meet the Australian standard AS/NZS 5033 for photovoltaic modules and related international standards; panels should be backed by a 25-year warranty and panels should be tested and checked for structural deficiencies (particularly after delivery to site and before installation).
- Robust operational protocols governing procedures for ensuring panel integrity – The Operational Environmental Management Plan (OMEP) would include clear provisions for routinely checking panels to ensure structural integrity and performance throughout the operational period.

Management of livestock during Project operation
'RES also states that landholders will still be able to utilise their properties for grazing livestock (sheep), which results in "agricultural benefits" for the region. RES clearly has no understanding of the need for appropriate farm management, pasture improvement and fertilisation practices to graze livestock, all of which will be unachievable if the land is covered in solar panels.' S-51190711
'We know that the land isn't able to be grazed when the panels are in place, due to live stock damaging the mechanisms, and also getting caught and injured by the mechanisms.' S-51280496
'If sheep grazing is to be approved for this proposed development, I feel that the owner of the stock will be severely penalised as the toxic fallout from the batteries and panels on and into the surrounding soil would become a bio security issue.' S-51285736
'It is proposed that sheep grazing would be possible after the construction has been completed. I know that this was a failure at Beryl due to the sheep being caught in the pivot mechanism and slowly being pulled apart, jamming the rotation.' S-51291706

As described in **Section 4.12.5** above, RES will further develop and implement an OEMP which will incorporate a Sheep Grazing Vegetation Management Plan (SGVMP) that will outline management measures for solar grazing in line with the Agrisolar Guide 2021 as well as other animal health and welfare standards and guidelines. This will include measures to manage the stock appropriately, including a requirement to keep the stock in good health, ensuring frequent shearing (to keep wool growth low), ensure mustering is conducted in an agreed safe manner, and that any fatalities are managed by the farmer. The OEMP will also detail requirements to manage erosion, soil fertility and compaction during the operation of the Project. The OEMP will be developed in consultation with the host landholders and DPI Agriculture.

RES will enter into a grazing agreement (agistment contract) with the relevant host landholders to allow the opportunity for dual use of the Project Area.

Since February 2021 RES has been conducting ongoing trials of sheep and solar farmland sharing at the Bomen Solar Farm, Wagga Wagga NSW, in partnership with a local livestock owner. There have been positive results to date, with the sheep being used to manage ground cover within the solar farm. Following the success of this trial, plans to commence sheep grazing on RES' Emerald Solar Farm in Queensland are underway following the completion of weed control measures. Results from this and any other trials will be incorporated in the SGVMP.

5.1.2 Noise

Issues relating to noise were raised in 7 submissions.

Construction Noise
'The construction noise is also a major concern to residents near to the site.' S-50980956

The Noise and Vibration Impact Assessment (NVIA) undertaken by Umwelt (refer to Appendix 15 of the EIS) included an assessment of construction noise and vibration impacts in accordance with the *Interim Construction Noise Guideline* (ICNG) (Department of Environment and Climate Change (DECC), 2009).

Six indicative construction scenarios were modelled in NVIA to reflect the equipment, activities and locations during different stages of construction:

- site establishment
- piling and foundations
- assembly of equipment (trackers, inverters modules etc.)
- underground cabling
- commissioning
- site rehabilitation and removal of temporary construction facilities.

However, due to the proposed amendments to the Project, an Addendum to the NVIA was prepared by Umwelt to assess the change in the noise and vibration impacts as a result of the Amended Project. The NVIA Addendum is attached in Appendix 10 of the Amendment Report, with a summary of the results provided below. It is noted that the NVIA Addendum should be read in conjunction with the previous investigations documented in the NVIA and EIS.

Construction related components of the Amended Project that were specifically assessed in the NVIA Addendum are:

- noise levels associated with the construction of the TWA facility (including its associated internal access road, mechanical plant and road traffic noise)
- noise levels as a result of the construction of the intersection upgrade works on the Castlereagh and revised construction traffic movements via the Primary access.

The construction noise model for the NVIA Addendum was updated to include three additional construction scenarios, i.e.:

- Road works – intersection upgrade on the Castlereagh Highway.
- Internal access road – Temporary Workers Accommodation (TWA) facility.
- Operation of the TWA facility.

The updated modelling results show that 13 receivers (i.e. non-involved residence) are predicted to experience some degree of noise during the construction period (i.e. noise levels above the noise management level (45 dB(A)). These are R001, R018, R024, R199, R200, R202, R203, R204, R205, R206, R208, R209 and R213). It is noted that the predicted modelling is conservative with noise levels being presented without any mitigation controls applied.

Compared to the EIS Project, the construction noise associated with the Amended Project would impact one less receiver (i.e. non-involved residence). Reasonable and feasible noise mitigation and management strategies will be implemented should the Project be approved in order to manage and mitigate the potential construction noise impacts on these receivers.

Operational Noise
'Continuous noise to impacted residences. What are the long-term health impacts of the continuous noise. Can they provide a confirmation from a medical health body to confirm that the continuous noise will not cause long term health impacts to community.' S-50995223 and S-51164544
'Noise impact caused by turning panels to the surrounding homes is not known and is not acceptable' S-51026223, S-51285750 and S-51028218

The NVIA undertaken by Umwelt (refer to Appendix 15 of the EIS) included an assessment of operational noise impacts in accordance with the *NSW Noise Policy for Industry* (NPfI) (EPA, 2017).

As noted above, an Addendum to the NVIA was prepared to assess the Amended Project. Noise modelling undertaken for the NVIA Addendum was updated with revised equipment selections and layout placement to assess the operational noise impacts associated with the Amended Project.

The operational noise levels have been predicted under default worst-case meteorological conditions (D-class with 3m/s windspeed or F-class with 2 m/s windspeed) in accordance with the NPfI.

Based on the updated modelling (Umwelt, 2024), the operational noise levels for the Amended Project are predicted to comply with the day noise limit of 40 dB(A), as well as the evening and night-time noise limit of 35 dB(A) at all receivers (i.e. non-involved residences).

5.1.3 Traffic and Transport

Issues relating to traffic and transport were raised in 10 submissions.

Increased traffic volumes
'Road use and traffic during construction of this and the many other proposed projects in this area will increase at a huge rate.' S-50679967
'The increased traffic will negatively impact residents and local road users, increasing travel times to locals and travellers.' S-50980956
'Infrastructure and traffic and noise.' S-51198208

RES recognises that traffic and transport issues are a key concern to the community, with particular regard to volume of truck movements and vehicle size during construction. It is anticipated that the proposed TWA facility for the Amended Project will significantly reduce the light vehicle movements to and from the Project Area as workers will reside on site.

An Amended Transport Impact Assessment (TIA) was prepared by Samsa Consulting Pty Ltd to assess the potential traffic impacts associated with the Amended Project.

5.1.3.1 Road Capacity

The Amended Project's traffic generation (presented in Table 6.4 of the Amendment Report) has been added to current daily peak hour traffic flows to obtain future traffic flows along the affected road network. The future traffic volumes are presented in detail in Appendix 11 of the Amendment Report.

Similar to the EIS, the results of the Amended TIA show that operating conditions (levels of service i.e. LOS) along the rural road network would only change marginally from existing conditions, even after the addition of the conservative scenario (maximum peak) solar farm generated construction traffic.
The majority of the rural road network under consideration has significant spare capacity and is operating at high levels of service (LoS A or B). It is noted that LoS is a qualitative description of traffic performance measured in six levels from A to F. A typical target level of service is LoS D or better. LoS A represents free flowing traffic conditions while a LoS B represents a balanced level of demand and capacity with some minor speed reductions.

With the implementation of the traffic management and mitigation measures, traffic generated by the Amended Project would have minimal effects on the future traffic operations and LoS of the transport route.

5.1.3.2 Highway Intersection Analysis

In response to feedback received during the exhibition period, the Project's primary access intersection design has been upgraded to include standard (full size) Channelised Right Turn (CHR) and Urban Auxiliary Left Turn (AUL) treatments, designed in accordance with relevant Austroads Guidelines, Australian Standards and TfNSW Supplements (refer to Section 3.2.2 of the Amendment Report for additional detail). This will further improve intersection safety and efficiency.

SIDRA intersection analysis was undertaken to determine the operations of the updated intersection, which incorporated the projected construction traffic into the existing Castlereagh Highway traffic passing into Primary access. The analysis was undertaken for the morning (AM) and afternoon (PM) peak periods.

The results show that the updated intersection would perform well during future construction of the solar farm with LOS A during both AM and PM peak hourly periods. The average delay (worst movement) was 10 seconds in the AM (right-turn out of the Primary access) and 11 seconds in the PM (right-turn into Primary access).

5.1.3.3 Road Safety

Access to the Amended Project would be consistent with that proposed in the EIS (Umwelt, 2022) with the addition of the updated intersection upgrade as outlined in Section 3.2.2 and Appendix 4 of the Amendment Report. The updated intersection upgrade would provide an auxiliary and/or protected (channelised) turn lane intersection treatment to accommodate the largest types of trucks requiring access.

5.1.3.4 Cumulative Impacts

The Amended TIA also considered the cumulative traffic impacts from the nearby existing, approved and proposed developments, including the three open cut coal mines located between 25 km and 35 km to the south-east. Considering the potential worst-case scenario of cumulative traffic generation from proposed and approved developments, levels of service along the rural road network were found to be generally adequate.

Damage to Roads
'Our council already struggles to maintain the roads in the area.' S-50679967
'Road and highway damage from increased traffic during construction phase. Local council is barely able to maintain roads as it is.' S-50986206
'Not to mention the inevitable damage to the local roads that this increase in traffic will cause; our councils are already struggling to maintain these roads'. S-51190711
'Our local road network is in an horrendous state at the moment and I object to the amount of proposed traffic this project will bring.' S-51198208
'*Damage to local roads due to more vehicles using roads whilst travelling to and from the site.*' S-51217975

As discussed in Section 6.6.3 of the EIS, should the Project be approved, RES will prepare road dilapidation reports covering pavement, drainage and bridge structures in consultation with Transport for NSW and the local Council for the proposed transport routes before and after construction. Regular inspection regimes undertaken in consultation between local Councils and the Proponent would be developed. Any damage resulting from construction traffic, except that resulting from normal wear and tear, would be repaired to pre-existing conditions.

5.1.4 Microclimate

Issues relating to microclimate were raised in one submission.

Microclimate
'Another matter of concern around Solar plants, is the Photovoltaic Heat Island Affect that increases the surrounding temperatures of agricultural land. These articles clearly outline scientific evidence of increased temperatures in solar farm areas, and the inability of the soil under them to cool down at night. This causes a warming effect similar to that of an urban built up area on its surrounding environment. Studies found that temperatures around large solar power plants, were 3-4 degrees (Celsius) warmer than wildlands nearby.
Tallerwang Solar Plant will not reduce the impact of climate change. Even if the whole of Australia's 1.2% of current emissions went to zero it would make "virtually no difference" to global temperatures (Chief Scientist Dr Alan Finkle 2017).' S-51279456

In recent years, as described in the above submission, scientists have theorised that large-scale solar farms may act as heat banks, causing an increase in temperatures on surrounding land. However, a new international scientific study using satellite technology has discovered that large-scale solar farms may in fact have a cooling effect on the land surrounding them (Guoqing et al., 2021). Specifically, using Landsat-derived land surface temperature data, the study found a cooling effect where the temperature of the surrounding land surface was reduced by up to 2.3 °C at 100 metres away from the solar farm, with the cooling effects reducing exponentially to 700 metres. Moreover, the impact was also evident in the field, despite smaller measurement areas. The cool island impact is attributable to the development of small-scale circulation cells, similar to those that develop around desert cities and water bodies (Guoqing et al., 2021).

Although further studies are needed to determine the exact mechanisms that cause the cool island effect and how it might vary with location and solar park design, the researchers hypothesise that it is due to the solar arrays shading and insulating the land surface, as well as energy being converted into electricity by the solar panels.

5.1.5 Visual

Concerns around visual impacts and landscaping were raised in 24 submissions.

Visual Amenity
'The proposed site at Tallawang - according to the developer's own proposal - "has an elevated grassed hilltop which is prominent and visible from some viewpoints up to 10 km away". This makes it a completely inappropriate location for a sea of solar panels - creating visual pollution and annoyance and detracting from the landscape for many, many kilometres' radius. In the dense lifestyle blocks of the area around the town of Gulgong this means many landholders will be negatively impacted - negatively affecting visual outlook.' S-50647707
'The visual aspect of these projects completely destroys the beauty of the area for miles. The people that live here do so because they love the land as it looks now.' S-50679967
'There are too many solar farm holdings springing up which is going to be a complete eyesore when they are all installed and up and running.' S-50930957
'Huge solar plants are not visually appealing and will impact near and not-so-near neighbours.' S-50980956
'Both Solar and Wind Farms are visually destructive, thus having a negative impact on the strong tourism industry in this area'. S-50986206
'I am objecting to this proposal because it is causing an unacceptable visual impact to the neighbouring properties. The lay of the land is such that the family along Castlereagh highway, Old Mill Road, Shepherds Lane and Black Lead Lane are on elevated land, overlooking the proposed solar works site.' S-51026223, S-51285750, S-51028218 and S-51035457
'My view over the now beautiful landscape will be disgusting.' S-51198208
'It is going to ruin our lovely scenic views of outa Gulgong.' S-51208221
'Rural residents rural outlook unsightly and uncompensated.' S-51217975
'Solar farms are not only an eyesore for those left looking at them but they, and the powerlines used to move the power, are going to make firefighting very difficult. It's not that many years since the Sir Ivan Fire in which there was a lot of aerial assistance.' S-51258218
'I am a rural resident who will be viewing these ugly solar panels with no compensation offered and the proposed screening will not grow without at least 3 years of tlc leaving me still viewing the solar panels. Even if the screening does grow it will take at least 5-10 years to actually screen the project.' S-51285736
'Visual Impact – Seeing first hand the monstrosity of a solar farm it is easy to see that renewable energy farms ruin the use of good agricultural land, turning the countryside we enjoy into an industrial jungle. I am concerned that the amount of renewable energy that is proposed for our region we will lose the heritage we now have which is the big draw card for people to visit our area.' S-51291706
'My property is in an elevated position overlooking the site of the proposed installation. One of the reasons we came here 45 years ago is the unspoilt beauty of the surrounding country. This will be destroyed forever.' S-51674956

The EIS acknowledges that the Project would introduce new infrastructure and build structures (such as solar panels, inverters, substation and ancillary structures) into the landscape which has the potential to change the landscape character and result in visual amenity impacts to sensitive receivers.

The EIS further highlights that a site selection and design process was undertaken by RES to identify and investigate alternative site locations based on proximity to the NSW electricity grid (existing and proposed) and the solar generation potential of the region. This included a broad site exploration activity across the region as well as investigation of alternative site locations within the local area. Managing environmental constraints and social aspects, improving infrastructure efficiency and matching localised energy demands were the major considerations in the evaluation of site location alternatives. The Project Area was selected as the preferred location due to a combination of factors, which amongst others included its relative flat topography and location away from densely populated areas and residential townships (refer to Section 2.6.2 of the EIS for more detail on the alternative site locations).

A Landscape and Visual Impact Assessment (LVIA) was undertaken by Envisage as part of the EIS (refer to Appendix 14 of the EIS) to assess the change in visual amenity and landscape character due to the Project. The LVIA assessed the following visual effects of the Project:

- The effect of the Project on the landscape (i.e. landscape character impact) through a landscape character assessment.
- The effect of the Project with regard to their views and visual amenity (i.e. visual impact).

The LVIA study area for the Project was established by preparing a Zone of Theoretical Visibility (ZTV) project to a radius of 8 km around the Project Area boundary, highlighting the areas with potential views of the Project (also called the visual catchment or viewshed). Solar farm visibility generally becomes minimal beyond 5 km; however, the ZTV for the Project was extended to 8 km to include Gulgong. It is further noted that a ZTV is determined entirely by landform (digital terrain models) and presents the potential maximum area of visibility, without accounting for screening or obstruction by vegetation, buildings, or other features in the landscape. Thus, a ZTV can overstate actual visibility. The areas of potential visibility identified within the ZTV were investigated during field inspection, and roads, lookouts, and residences were accessed where possible, to determine whether the Project's various elements (the solar farm, the solar farm entrance, the substation options, and the transmission line) would be visible.

The field assessment confirmed that the following viewpoints (VPs) would potentially view some part of the Project:

- 8 public viewpoints (VPs) (including roads, lookouts and parks)
- 31 private residences within 5 km
- 4 clusters of private residences beyond 5 km i.e.
    - VP241: Representative viewpoint for Barneys Reef Road vicinity residences
    - VP242: Representative viewpoint for Old Mill Road vicinity residences
    - VP243: Representative viewpoint for Beryl Road vicinity residences
    - VP244: Representative viewpoint for Gulgong's elevated residences.

The LVIA found that the most visually impacted private VPs would be within 1.5 km from the Project. Specifically, VP1, VP24 and VP213 are predicted to have a moderate visual impact as a result of the Project.

The predicted level of impact to private residences beyond 5 km (i.e. VP241, VP242, VP243 and VP244) would be ***low*** as the Project would cause a barely perceptible deterioration in the existing view.

Further to the above, as a result of the proposed amendments to the Project (refer to **Section 3.1**), it is expected that the Amended Project would have a reduced visual impact. An Addendum to the LVIA was prepared to assess the change in visual amenity and landscape character due to the Amended Project. Updated photomontages have been prepared as part of the LVIA Addendum to illustrate the Amended Project from viewpoints which would be affected by the changed visual impacts. The LVIA Addendum is provided in Appendix 9 of the Amendment Report with a summary of the key findings provided below.

Overall, the LVIA Addendum concluded that the Amended Project will largely result in comparable landscape character and visual amenity impacts relative to the EIS Project, with a reduction in visual impact for one private viewpoint (VP24) from ***moderate*** to ***low-moderate***.

Targeted landscape screening is proposed through the concept landscape plan (refer Figure 6.2 of the Amendment Report) to screen and/or reduce views of:

- solar panels from the Castlereagh Highway
- solar panels in direct line of sight of Puggoon Road users
- solar panels in view from higher elevated residences.

Landscape Planting
'Vegetation screening in our climate requires dedicated watering and follow-up' S-50647707 '*Vegetation screening will not work as in this harsh climate it will die.'* S-51198208 *'To reduce the visual impact of this project vegetation screening has been proposed in certain areas. However the experience with Beryl Solar Farm is illuminating. This project was approved on the basis that effective vegetation screening would be provided within 3 years of construction. The plantings failed and despite numerous protests nothing was done. Finally the owner applied successfully for a modification to extend the compliance period for a further 3 years. Yet what guarantee is there that these plantings will ever provide effective screening? Planted vegetation screening is a band aid solution to a problem caused by poor site selection and project design.'* S-51674456

Landscaping by planting trees and shrubs is proposed as a mitigation measure to reduce the visual impact of the Project. A concept landscape plan for the Project was prepared as part of the LVIA (refer to Figure 9-1 of Appendix 14 of the EIS). The plan illustrates opportunities for screening and has been informed by consultation with affected landowners. As noted above, the plan has been updated as part of the Addendum LVIA undertaken for the Amended Project. The concept landscape plan for the Amended Project is provided in Figure 6.2 of the Amendment Report.

A detailed landscape plan would be prepared in a later detailed design stage when more key stakeholder engagement has been done and the Engineering Procurement and Construction contractor is finalising the layout of the project. The detailed landscape plan would be prepared prior to landscape implementation which would refine the concepts presented in the draft.

The aim of proposed landscaping is to provide a quick growing, dense screen that would reduce views of the solar panels from public view, as well as providing additional ecological benefits. The plant species have been selected on the basis that they:

- provide effective visual screening
- are locally native
- provide ecological benefit to the site (such as a food source for birds, habitat etc.)
- are suitable for the site conditions (are hardy)
- include quick growing as well as greater longevity species.

The detailed landscape plan would also include a maintenance plan that would continue throughout the operational period of the Project, to ensure proposed landscaping achieves, and continues to achieve, intended outcomes. The maintenance plan will include:

- a defined initial establishment period of a minimum of 12 months
- a schedule for monitoring planted areas and watering during the establishment period
- ongoing maintenance practices during and post-establishment (such as a weeding/mulching regime)
- guidance for replacement planting (for plants that fail to thrive).

5.1.6 Glint and Glare

Issues relating to glint and glare were raised in two submissions.

Glint and Glare
'The continuous glare will severely impact properties.' S-50995223 and S-51164544 *'I object to the Tallawang Solar Electricity Generating Works proposal because their claim of virtually no glare from their solar panels is not factual as evidenced by the glare at times from the rooftop solar panels of my neighbours.'* S-51071212

Solar PV modules with anti-reflective coating reflect very little sunlight (about 1.5%). *The NSW Department of Industry Resources & Energy: Solar Farms in NSW Fact Sheet* (June 2016) states:

Solar farms are not considered to be reflective. Photovoltaic panels are designed to reflect as little light as possible (generally around 2% of the light received) to maximise their efficiency, absorb sunlight and convert it to electricity. Minimising the light reflected from solar panels is a goal of panel design, manufacture, and installation. The glare from panels is significantly less than that from bodies of water.

Notwithstanding, glare and reflectivity as a result of the Project was assessed as part of the detailed Landscape and Visual Impact Assessment (LVIA) undertaken by Envisage Consulting as part of the EIS technical studies.

The LVIA found that glare and reflectivity as a result of the Project is considered unlikely. This is further reduced as a result of proposed targeted landscaping along the perimeter of the Project Area to reduce visual impacts to key viewpoint locations. This landscaping will additionally mitigate the potential for glare.

5.1.7 Socio-Economic

Issues relating to socio-economic impacts were raised in 32 submissions.

Local Economic Benefit
'There is virtually no economic benefit to our town.' S-50647707
'This project will have minimal local benefits in the longer term and may force some local business to be unviable.' S-50787206
'The works are enriching various developers and landowners who do not live in Gulgong and is writing off other residents' properties in the process. Fellow Australians should be treated with reasonable concern. It is heartbreaking to see how property owners are suffering because of these works that are mushrooming around their family homes.' S-50995223 and S-51164544
'No economic benefit to our community once the proposed project if finalised.' S-51198208
'No financial benefit to local residents from solar power.' S-51217975
'Once proposed construction is completed there will be no economic benefit to our town.' S-51285736
'It would seem that not many property owners would receive any compensation. S-51674956
'Much is made of the economic benefits that these projects bring to host communities. However, most of the materials required for construction are sourced from overseas. In addition, there will be insufficient local labour for construction so a mainly itinerant workforce will be used. This will inject some money into the community during the construction phase, but the workforce will be minimal once construction is complete. There will be problems in accommodating a large itinerant workforce, with repercussions for the tourist industry. Also, this influx of workers has the potential to create social order problems within the community.' S-51674456
'*This is a welcome development in that it acknowledges the impact of this project on neighbours and the wider community. However when compared to the payments made to host landholders this compensation is relatively meagre. This disparity is inequitable in that the whole community must suffer the adverse impacts of this project while a few host landholders acquire most of the benefit*.' S-51674456

An Economic Impact Assessment (EIA) was completed by Ethos Urban as part of the EIS for the Project (refer to Appendix 7 of the EIS) to address the economic benefits and impacts associated with the Project. The EIA included an assessment of Project investment, employment, business and industry participation opportunities, agricultural impacts, accommodation and housing, economic stimulus and cumulative impacts to derive net economic outcomes for the study area which included the Mid-Western Regional Council, Warrumbungle Shire Council and Dubbo Regional Council.

The EIA has been updated for the Amended Project and is provided in Appendix 16 of the Amendment Report. In particular, the assessment provides an updated assessment of the social and economic impacts of the Amended Project with updated census data, updated review of existing infrastructure and utilities available within the region. The assessment concluded that the Amended Project would:

- require approximately $1.3 billion in investment during the construction phase of which approximately $195 million will be retained in the Mid-Western Regional, Warrumbungle Shire and Dubbo Regional LGAs
- will support 230 direct and 370 indirect full time equivalent (FTE) construction jobs in the national economy on average over the 36-month construction period, of which 85 FTE jobs would be of benefit to the Mid-Western Regional, Warrumbungle Shire and Dubbo Regional LGAs

- construction workers relocating to the region would be expected to inject approximately $24.6 million in new spending into the economy over the construction phase, supporting approximately 85 FTE jobs in the service sector in the Mid-Western Regional, Warrumbungle Shire and Dubbo Regional LGAs over this time

- once operational, 13 direct and 40 indirect FTE jobs will be supported nationally, of which 21 FTE jobs (includes direct and indirect jobs) will be associated with Mid-Western Regional, Warrumbungle Shire and Dubbo Regional LGAs.

After construction, the net local economic stimulus included in this total which will be realised as ongoing benefits over 35 years of operations as a result of landowner payments, wage stimulus, community/neighbour payments and increased Council land tax returns totals $180 million. This includes benefits for the whole community, not just associated landholders.

Local Employment
'The local employment benefits that the companies developing these projects promote, are much less than advertised. Once the project is completed the itinerant workforce moves on, no job opportunities for locals, just reduced income and land values for the farming families affected.' S-50679967
'No increase in local employment as Solar Farm workforce is temporary and moves on to next area after project is completed. Further reduction in local employment as local farming families are forced to move due to smaller land areas to work and negative restrictions placed on existing agricultural farms near Solar Farms.' S-50986206
'7 ongoing jobs during operation are likely in distant offices. There is no benefit to the local community.' S-51017210
'Employment for project not local.' S-51217975
'While it is quoted that 3900 jobs will be made available from my experience most of the jobs will go to labour from outside the area with a paltry seven jobs permanent to maintain these eyesores.' S-51256207
'There will be no long-term jobs from this project that will bring economic and employment benefits to the community. These developments only become a stain and headache for the locals before, during, after commencing and if they get pulled down.' S-51278956
'*Employment – In the proposal it states that there is employment opportunities for the local community, as we have seen with the Beryl project it was mostly backpackers who were employed for the construction which caused major issues in our community.'* S-51291706

Following EIS exhibition, RES undertook to develop an Accommodation and Employment Strategy (AES) (refer to Appendix 5 of the Amendment Report) as a direct response to community and agency concerns relating to employment and procurement. Specific to local employment, the aim of the AES is to ensure that procurement processes and purchasing power are used appropriately to generate positive social and community outcomes, in addition to the efficient delivery of goods, services and works. Local employment and procurement strategies build on initiatives already undertaken by the renewable energy sector in enhancing sustainable and strategic procurement practice, enabling procurement to effectively contribute to building stronger communities; and is a key mechanism by which to generate wider social/community benefits.

The Amended Project will generate around 380 full time equivalent (FTE) jobs during construction (with a peak of 420 onsite workers estimated over a nine month peak), and 10 full time staff during its operation and maintenance phases. These employment benefits extend through the local supply chains to fuel supply, vehicle servicing, uniform suppliers, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses.

The AES acknowledges that the labour market within the social locality is constrained and features low unemployment rates across all LGAs. Multiple concurrent projects are placing pressure on workforce supply and there are identified gaps in workforce skill level and capacity. There are also limited numbers of related businesses in the region, which presents challenges for achieving local procurement goals. However, RES has committed to partnering with businesses that have appropriate experience, qualifications, shared values and provide value for money.

RES is committed to monitoring and evaluating the effectiveness of the actions proposed in the AES. Potential key indicators that may be used to measure and evaluate progress include:

- the number of partnerships formed with employment services, training providers, and/or Aboriginal organisations
- the number of rooms occupied by workforce or contractors in short-term accommodation
- the number of local or regional workers and businesses engaged in and/or registering their interest in the Project
- the number of business and employment opportunities for First Nations businesses and people
- feedback from key stakeholders on the development of the TWA.

RES will continue to engage with the Mid-Western Regional Council, Warrumbungle Shire Council and Dubbo Regional Council, as well as EnergyCo during the pre-construction phase and throughout construction regarding in relation to the AES.

Influx of workforce into rural community
'As per the 'Summary of environmental and social findings- table E.1', whilst RES estimates generating 700FTE employment opportunities within the area, these also means a hugely significant impact in the traffic footprint and number of people within the local community. This creates safety concerns amongst many others; are these workers drug and alcohol tested before the come to live/work within the community? We do not want this many people in and out of our farming land!!' S-51190711
'Infrastructure of Gulgong township not able to cope with extra influx of company workers using main street and small business facilities.' S-51217975
'I am concerned about the influx of workers and this effect on our already struggling healthcare systems.' S-51217978
'When I compare the workforce numbers in the various solar EIS documents they vary considerably. This is very concerning for the communities who have to endure the long-lasting impacts of these developments.' S-51225754

As described above, an AES was developed in response to community and agency submissions on the EIS (refer to Appendix 5 of the Amendment Report). As part of the AES development, RES developed an updated workforce histogram, with revised workforce numbers, and construction duration in conjunction with a construction company.

The AES identified that, based on current conditions, there is limited availability of short- and long-term accommodation in the region, especially when considering other approved and/or proposed renewable projects within the REZ. The AES therefore proposed that a TWA facility is required for the Project to accommodate the proposed workforce (up to 400 workers for the full construction period of up to 36 months). The AES further proposed that the TWA facility would need to be self-sufficient in supplying services and utilities such as electricity, water supply and waste removal. This was supported by advice from the Mid-Western Regional Council.

As part of the AES development, RES investigated potential sites for a TWA facility within and/or near the Project Area. The preferred site for the TWA facility is located within the south-east corner of the Project Area.

Accordingly, the Amended Project includes a purpose-built TWA facility to accommodate a maximum of 400 workers for the duration of the construction period. The TWA facility will include 400 bedrooms with ensuites, a reception/retail area, offices, dining area with servery and connected kitchen, a recreation room, beer garden and covered deck area, gym, Wi-Fi, bulk wet mess storage with wet mess area, 24/7 security, office and communications room, first aid room, and laundry. The TWA facility is described in detail in Section 3.2.1 of the Amendment Report.

In addition, RES is committed to provide a medical / health service through a registered nurse/GP available on site to triage health concerns and referring to external health provides if needed (via telehealth services), ordering and/or administering medication as well as write pharmaceutical prescriptions if needed.

By providing ample food and recreation facilities, in addition to first aid services, the TWA would provide a level of self-sufficiency aimed at minimising the impacts of the construction workforce on local and regional towns and services.

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.

Mental Health
'The threat of changes to lifestyle, farm management practices, livelihoods and future uncertainty is causing emotional stress to hard working rural people who do not deserve or need it.' S-50679967
'Distress and mental health impact on surrounding property owners.' S-51026223, S-51285750, S-51028218 and S-51035457
'My life and mental health, and that of others, are continually disrupted by the having to consider project after project and I can see that our rural lifestyle and surroundings will be destroyed by such projects; the DPE must give much more weight to the views and objections of the community.' S-51070219
'I read that one nearby resident felt "devastated" on hearing of this proposal. I can attest that is exactly the feeling of those so greatly affected by such a proposal yet there appears no offer of any form of professional counselling to help those residents cope with such a major intrusion on their lifestyle and amenity.' S-51175729
'There has already been a significant impact on the mental health of many local farmers and their families with regards to this project as well as the many other renewable projects within this community and the wider community.' S-51217978

When considering Project impacts on community health and wellbeing as part of the Social Impact Assessment (SIA) (refer to Appendix 6 of the EIS), mental health issues in relation to anxiety and worry were raised as a result of the uncertainty of people's future way of life, particularly for those living nearby the Project. Whilst anxiety and stress alone does not constitute mental illness, increased levels can affect quality of life, and for individuals with an existing vulnerability to mental health issues, can become an additional stressor. The mental health of one person can also have flow on effects to their partners, family, and social dynamics within their community.

Research confirms that the impacts of major projects on people most affected can include increased stress levels, a sense of things happening beyond one's control and distress induced by environmental change connected to their home environment (Albrecht, 2009).

Continued and regular consultation and information provision is an effective method to reduce uncertainty and allow stakeholders to achieve a sense of control over their future and decisions that may affect them. The Community and Stakeholder Engagement Plan for the Project includes consistent, transparent and proactive information provision and consultation with stakeholders throughout Project development.

RES has proposed a Voluntary Planning Agreement (VPA) to Mid-Western Regional Council that represents an investment of $850 per MW per annum for the duration of the Project Operational Life (35 years). This is a total investment per annum of $425,000 and indexed to CPI.

Funds provided by this VPA will be utilised to deliver projects identified in Mid-Western Regional Council's Community Plan and Delivery Program. The Community Plan is prepared by Council on behalf of the community and is developed collaboratively with the community. The Mid-Western Region Community Plan sets out the community's vision for the future including current situation, future goals and actions to achieve goals. The outcomes of the plan determine the priorities for the region, including services and projects Council will focus on.

Accommodation Impacts
'The small number of workers during the construction phase merely block accommodation for the much more lucrative trade of tourism.' S-50647707
'an influx of construction workers will decimate the limited availability of rentals.' S-50980956
'Less accommodation available for rent for local employment.' S-51217975
'I am concerned about the influx of workers required for the project, particularly the 700FTE proposed for the construction phase; the potential impacts of such a sharp increase in local workers means an increase in local rental prices which many of our locals now already renting will no longer be able to afford. Therefore, as has historically happened in these situations (please refer to Miles, Qld- now a ghost town), those unable to afford the rent move away and the community suffers this loss. Most of these are now valuable community members who are skilled workers, and local towns such as those surrounding Tallawang cannot afford to lose the members of their community.' S-51217978
'The details provided for the accommodation of the 580 people during the peak of construction is inadequate. This construction workforce along with all the other renewable developments workforces will result in unacceptable impacts on housing supply and affordability in our communities. Further, the EIS says the workforce will vary from month to month, such a vague statement will have direct impacts on housing in a communities. This will result in homelessness of residents in our communities, as there isn't the housing supply to accommodate the construction workforce for these developers.' S-51225754
'Providing accommodation for itinerant workers will be difficult and create a boom, bust situation.' S-51256207

As described above, the AES identified that, based on current conditions, there is limited availability of short- and long-term accommodation in the region, especially when considering other approved and/or proposed renewable projects within the REZ. Updated workforce numbers and an anticipated workforce histogram is also provided in the AES (refer to Appendix 5 of the Amendment Report). The AES proposed that a TWA facility is required for the Project to accommodate the workforce (up to 400 workers for the full construction period of up to 36 months).

Accordingly, the Amended Project includes a purpose-built TWA facility of approximately 5 ha to accommodate a maximum of 400 workers for the duration of the construction period. TWA facilities will include rooms with ensuites, a reception/retail area, offices, dining area with servery and connected kitchen, a recreation room, beer garden and covered deck area, gym, Wi-Fi, bulk wet mess storage with wet mess area, 24/7 security, office and communications room, first aid room, and laundry. Further details are provided in the Amendment Report. The TWA facility is described in detail in Section 3.2.1 of the Amendment Report.

Property Devaluation
'For many, many people living adjacent to and surrounding these monstrous projects, land values will be significantly reduced.' S-50679967
'potentially impacting the value of neighbouring properties.' S-50980956
'Property values of surrounding properties will be significantly reduced.' S-50986206
'Are there any reports from reputable real estate agents that confirm that extensive solar works does not reduce surrounding property values? No-one wants to buy a property adjacent to a solar farm.' S-50995223 and S-51164544
'Reduction of property values.' S-51026223, S-51285750, S-51028218 and S-51035457
'The market value of adjacent land will be severely negatively impacted by this solar farm as NO ONE WANTS TO LIVE NEXT DOOR TO A SOLAR FARM!' S-51211472
'Devaluation of my property.' S-51285736
'Property Values – Soon after the Beryl Solar Farm was constructed the valuer general assessment was received for my property with an increase of more than 100 k from when the previous valuation was given only 1.5 years prior. I requested a re-evaluation and after a sight inspection from the Valuer Generals Office it was confirmed that due to the construction of the solar farm my land value should not be increased.' S-51291706

It is recognised by the renewable energy industry nationwide that neighbouring landholders to projects have recurring concerns regarding the potential impact of project infrastructure on their property values (Office of the Australian Energy and Wind Farm Commissioner, 2020).

Whilst there is no methodical research in Australia on the impacts of solar farms on property values, international evidence suggests that property value impacts are minimal. Several international studies have been completed in recent years on property prices on land surrounding solar farms and wind farms. These studies indicate that while there is insufficient data to have a conclusive answer, solar farms and wind farms are unlikely to negatively impact on the value of surrounding land in an agricultural setting.

A 2016 Urbis study commissioned by the NSW Office of Environment and Heritage had similar findings and states that for rural properties used for primary production, there is no direct loss of productivity resulting from solar farms or wind farms; therefore, they are unlikely to negatively impact the value of such properties. Likewise, a review of property resale analysis indicated that all of the properties examined demonstrated capital growth that aligned with the broader property market of the time (Urbis, 2016).

It is further noted that a wide range of factors (unrelated to solar farm) can affect property values over time, such as the individual property, demand and supply, utility, scarcity, and transferability. In line with this, the EIA prepared as part of the EIS noted that the ABS Regional Internal Migration Estimates suggests that regional areas across NSW, including the Mudgee locality, have been seen as popular "tree-change" opportunities for those leaving major cities during the COVID-19 pandemic. Migration patterns such as this may also contribute to property and rental price fluctuations due to low rates of housing availability.

Tourism Impacts
'Indeed tourists to our beautiful small town (Gulgong) and surrounding lush, rolling green hills, will not be benefitted by swathes of solar panels. The nearby example is Wellington, NSW which has turned a similarly pastoral outlook into an ugly industrial site that has drowned the town.' S-50647707
'Also as Gulgong depends for viability on its tourist trade the unsightly solar tracts surrounding the town will be a disincentive.' S-50733477
'Tourism is recognised locally as significant portion of the area's income and any loss in this area will be felt throughout the community.' S-50980956
'Our community tourism will be decimated with the need for construction workers accommodation.' S-51198208
'Tourist destination compromised due to less accommodation for tourists available due to temporary influx of workers.' S-51217975
'Perhaps one of my biggest objections is that presently it is estimated that 573,000 tourists visit the area every year. I am sure they wont be travelling to see an ugly industrial installation spoiling a lovely landscape such as occurs around the Goulburn and other areas where these developments proliferate.' S-51256207
'The town hosts an annual Henry Lawson festival which celebrates the historical nature of Gulgong. The town's tourism business sector supports the community. This project will impact the historical outlook of the town and ring-fence it with industrial solar works. This is going to destroy tourism business and jobs. This will have huge negative social and economic impacts.' S-50995223 and S-51164544

The Project is within the NSW South Western Slopes biogeographical region, which comprises elevated, undulating granitic slopes; undulating black soil slopes with crops, pasture grasses and scattered timber; higher, forested slopes and ridges; and hilly lands with native grasses and scattered trees. The value of this landscape is recognised by the objectives of the RU1 zone, as listed in the *Mid-Western Regional Local Environmental Plan 2012* which include, among other objectives:

- to maintain the visual amenity and landscape quality of Mid-Western Regional Council by preserving the area's open rural landscapes and environmental and cultural heritage values
- to promote the unique rural character of Mid-Western Regional and facilitate a variety of tourist land uses.

The Landscape and Visual Impact Assessment (LVIA) undertaken for the Project by Envisage (refer to Appendix 14 of the EIS) considered these objectives in its assessment, but also acknowledged that the designation of the area as a REZ will promote the ongoing establishment of energy facilities in the vicinity.

The LVIA concluded that the landscape character impact of the Project would be ***low-moderate***, stating that the characteristics of the solar farm allow it to generally 'fit' within the existing landscape, with minimal landform change and the retention of vegetation along creek lines and in larger stands across the Project Area. While the extensive area of solar panels would change landscape character in parts, it is noted that the transmission line that was assessed in the EIS Project is no longer part of the Amended Project and hence visual impacts from the Project itself will be reduced.

Furthermore, an Addendum to the LVIA has been prepared and considered the updated cumulative visual impact of the Amended Project and other nearby renewable energy projects in proximity to Gulgong. The LVIA Addendum found that although the Amended Project would not notably exacerbate the visual impact of the area, there have been changes to other planned renewable developments in the surrounding area as well as additional renewable developments since exhibition of the EIS (Umwelt, 2022). The Addendum LVIA (Appendix 9 of the Amendment Report) has considered cumulative visual impacts from the nearby developments within 35 km of the Amended Project as wind farms can be visible up to 35 km away.

Cumulative visual impacts would involve the following:

- Most viewpoints to the Amended Project would be affected by the proposed Barneys Reef Wind Farm, which would be seen over significantly greater distances compared to the proposed solar farms and proposed BESS, due to the anticipated 280 m height of the turbines.
- Four residential viewpoints (Jacksons Lane (VP1), 980 Puggoon Road (VP24), 146 Puggoon Road (VP210) and 312 Castlereagh Hwy (VP223)) would experience the most significant cumulative visual impact should all developments proceed. Their existing view would be affected by seeing one or more solar farms, together with BESS units or the CWO REZ infrastructure, sometimes in close proximity, and in the same viewing direction. The multiple developments would increase the proportion of their view adversely affected by infrastructure.
- Three public viewpoints would experience the most significant cumulative visual impact:
    - Puggoon Road would provide views of multiple developments in close proximity, (however, would be accessed by very few people).
    - Castlereagh Highway would provide intermittent, relatively brief, sequential views of multiple developments (rather than multiple seen at one time) along the route around 32 km long between Gulgong to Birriwa.
    - Flirtation Hill would provide views of four new developments within the same view. The solar farms would be relatively inconspicuous given their distance (over 5 km), surrounding landscape of vegetation and background ridges).

Impacts on tourism in relation to availability of accommodation have been addressed by the addition of a TWA facility on-site, as part of the Amended Project (detailed in Section 3.2.1 of the Amendment Report) therefore impacts on tourist accommodation are no longer anticipated.

The Project will not preclude the future development of surrounding land, and the EIS demonstrated the Project can achieve the relevant impact assessment criteria. Additionally, RES has committed to the implementation of management and mitigation measures to address any residual impact associated with the Project. The Project is sited in a REZ and the site location meets the general principles for better site selection set out in the NSW *Large-Scale Solar Energy Guidelines* (2018).

Impact to Community / Rural Lifestyle
'I'm objecting to this solar farm due to … the impact it will have on the community and local families.' S-51164769 *'This project is a detriment to the Mid-Western community. The direct impact will affect hard-working farmers and local families*.' S-51172208 *'There will be significant negative impacts to the social life and general lifestyle of neighbouring landholders and their families due to the solar farm.'* S-51217978 *'The removal of agricultural land, families and potential for farm leases is taking away the social structure of rural communities that has made them so resilient during all the natural disasters.'* S-51227456 *'Neighbours and people within renewable communities who have issues with projects are often gagged. They are offered money or infrastructure to say nothing. Issues are being under-addressed or ignored. It is not good for the environment or community morale.'* S-51191460 and S-51279456

RES recognises the potential for impacts on the social fabric of the local community as a result of differing levels of support for the Project, and changes to community composition and cohesion due to the influx of an external workforce.

As is typical for any large scale development, the EIS has identified a range of social impacts both positive and negative and identified management measures to assist with managing these impacts. Throughout the EIS and SIA process, management and mitigation strategies have been identified to minimise negative social impacts and enhance positive impacts.

RES is committed to the development and implementation of a range of management and mitigation measures to address the social impacts and benefits associated with the Project, these include:

- A Social Impact Management Plan (SIMP) will be prepared and implemented for the Project to manage and enhance social impacts through each stage of the Project.
- The draft Accommodation and Employment Strategy (AES) will be updated should the Project be approved, in collaboration with key stakeholders and Mid-Western Regional Council. The AES will include targeted and proactive initiatives to maximise local employment and sourcing from local communities such as training, up-skilling and capacity building support, in collaboration with local stakeholders and training providers, and will consider targeted initiatives to appropriately manage workforce during construction period to manage social changes caused by the incoming population.
- The Community Stakeholder Engagement Plan (CSEP) will be updated regularly to facilitate ongoing engagement with the community to manage and enhance social impacts throughout each stage of the Project through detailed design, construction and operation.
- A Shared Benefit Strategy will be implemented to target investment to local needs and priorities and cognisant of activities/efforts of adjacent projects and across the broader REZ. The strategy will include a Neighbours Benefit Program, focused on delivering benefits to the Project's closest neighbours and those most directly affected by Project activities, and a dedicated Community Enhancement Program, focussed on support and funding of broader community initiatives or programs at the local and regional level.

The SIA concludes that collectively these measures will provide a robust social impact management and mitigation plan for the Project that aims to enhance the positive social impacts and mitigate the potential negative impacts.

5.1.8 Historical Heritage

Issues relating to historical heritage were raised in 10 submissions.

Historical nature of Gulgong
'*The town hosts an annual Henry Lawson festival which celebrates the historical nature of Gulgong. This project will impact the historical outlook of the town and ring-fence it with industrial solar works.*' S-50995223 and S-51164544
'Destruction of the historical nature of the town. The visual impact on the historic town of Gulgong is unacceptable'. S-51026223, S-51028218, S-51285750 and S-51035457
'The rustic and historical beauty of the local area, which has been immortalised in the Australian consciousness by the poetry of Henry Lawson; and that helps make the Gulgong district an attractive place to variously travel to, stay in, explore and roadtrip through.' S-51089212
'Heritage township compromised with the extra short term workers using township.' S-51217975

A Historical Heritage Assessment (HHA) was undertaken as part of the EIS to assess the historical heritage related impacts associated with the Project. A summary of the key findings of the HHA is provided in Section 6.10 of the EIS and the full report is provided in Appendix 13 of the EIS.

The HHA found that the listed heritage items in the vicinity of the Project Area are concentrated in or near Gulgong to the southeast of the Project Area, including the Gulgong Heritage Conservation Area (HCA) which is approximately 8 km away. The Project Area will be both physically and visually separated from these heritage items, with the proposed solar panels set back from the Castlereagh Highway (500 m) to minimise their visibility from the road and the wider landscape.

Whilst the Project would result in changes to the rural landscape of the Project Area, the LVIA prepared as part of the EIS identified that the changes would largely be to the *'immediate landscape character of the vicinity when viewed from the proximity of Puggoon Road'* (Envisage, 2022). This is located some distance (>2 km) from the listed heritage items.

From more distant viewpoints, including from Gulgong HCA, the proposed infrastructure as part of the Project would 'appear as a dark colour over the slopes, located between existing stands of vegetation, and have little impact on the wider landscape character of the area' (Envisage, 2022). This is of importance to note for the heritage items in the vicinity, particularly the Gulgong HCA, which includes the vistas of rolling countryside as a component of its heritage significance (NSW SHI). Although the solar panel structures may be noticeable in some views from the heritage items, this would be at a great distance and consists of a small area set within the wider rural landscape. A photomontage from Flirtation Hill (a public lookout within Gulgong) has been completed as part of the LVIA Addendum (refer to Appendix E in the LVIA Addendum, which is provided as Appendix 9 of the Amendment Report).

After the exhibition of the EIS, the HHA has been updated to include further discussion on the impact of the Project on the historical nature of Gulgong Township. The Amended HHA is provided in Appendix 8 of the Amendment Report.

The Amended HHA further notes that the significant views for the HCA would remain available across large areas of the landscape and would remain recognisable as the 'vistas of the rolling countryside' as set out in the statement of significance for the HCA. In addition, the historical setting and demonstrative characteristic of Gulgong as a representative example of gold rush era town would not be affected by the Project. The Amended Project will not result in the loss or substantial modification to these landscape views from the HCA, nor other listed heritage items within the area.

Therefore, it is considered that the Amended Project is unlikely to result in any adverse visual impacts on the listed heritage items in the vicinity of the Amended Project.

5.1.9 Aboriginal Heritage

Issues regarding Aboriginal heritage were raised in one organisation submission from the Chairperson of the Working Party for the Warrabinga-Wiradjuri #2, #6 and #7 Native Title Claimants (the Warrabinga).

Aboriginal Heritage
'The Environmental Impact Statement and associated Aboriginal Cultural Heritage Assessment lists 31 sites that were identified during the Aboriginal heritage assessment, as native title claimants we believe every site is important and would like to see these sites avoided in the first instance.

Aboriginal Heritage
Warrabinga, as the native title claimants, and not as Registered Aboriginal Parties for the area, request monitoring of all ground disturbance activities within 200 m of any creek or standing water source, rock shelter or PAD, as well as of areas in close proximity to any identified heritage sites. *Warrabinga request that impacts to all identified sites, creeks, water sources, flora and fauna and ridgelines be avoided in the first instance, or the works program designed to mitigate any impacts on these areas, landscapes or sites.* *Warrabinga request that in areas where visibility was low, a further survey of the area is undertaken at a time when visibility may be better or in summer when the light would allow better detection of sites.* *There are a large number of Aboriginal sites located within or in close proximity to the works area, including PADs with associated artefact scatters that have a long history of use, these areas are culturally and spiritually important camping sites and may hold potential burials. These sites are all areas of cultural significance to Warrabinga.* *Warrabinga are concerned that the works will impact on their spiritual connection with the land, and request that disturbance is minimised.* *Warrabinga request that there is a strict unexpected finds procedure in place and that anyone who is involved in the works is made explicitly aware of that procedure.* *Warrabinga request that all employees, agents, contractors and subcontractors involved in the project undergo cultural awareness training with Warrabinga.* *In relation to any Crown land or Crown waterways included in the project area, Warrabinga note that as native title claimants, they have rights to be consulted and rights to negotiate about future acts which Applicant wants to undertake within the native title claim area. Warrabinga reserve these rights.* *The proposed activities would unduly interfere with Warrabinga's cultural, social or community activities carried within the project area, such as cultural heritage activities and ensuring their heritage sites are intact.* *Activities authorised by application SSD-23700028, if granted, would impact upon Warrabinga's asserted native title rights, cultural heritage, and lifestyle through impacts on the environment.* *Warrabinga are concerned that the works will impact on the spiritual connection with the land within the project area.* *In light of the reasons listed above, Warrabinga asserts that native title exists within the land subject to the project and objects to the granting of SSD-23700028 approval without consultation and negotiation with Warrabinga. If the SSD-23700028 approval is granted, the Department is effectively destroying Warrabinga's connection to the area and thus directly impacting their native title claim, and the rights and interests in that land to which the approval applies.* *As native title claimants, Warrabinga, have rights to be consulted and rights to negotiate about future acts which the Applicant wants to undertake within the native title claim area. Warrabinga reserves these rights'* S-51280456

Extensive consultation between RES and the Warrabinga Native Title Claimant Group has been undertaken since the exhibition of the EIS, as described in Section 5.0 of the Amendment Report. Further queries regarding land tenure and Project impacts have also been raised by the Warrabinga during this consultation.

Correspondence in response to these issues has been issued directly to the Warrabinga via their lawyers and the key discussion points/outcomes in relation to Aboriginal heritage are outlined in **Table 5.1** below.

Table 5.1 Response to Warrabinga-Wiradjuri #2, #6 and #7 Native Title Claimants

Warrabinga Comments	Response
1. The Project is located within the Macquarie-Bogan Rivers System, in the lower catchment of Tallawang Creek, Slapdash Creek and Wialdra Creek which discharges to the Cudgegong River. The Cudgegong River is of great Indigenous significance to our client and they would like the setback from any creek to be increased from 40 metres to at least 100 metres to ensure there are no negative impacts on the Cudgegong River.	As part of Project amendments, the overhead transmission line has been removed from the Project and as a result there will be no impacts on the Macquarie-Bogan or Cudgegong River systems. The Project area now lies approximately 500 m from the River systems.
2. Our client would like all impacts to Potential Archaeological Deposits (PAD) and artefact scatters to be avoided.	Iterative redesign has been undertaken throughout the Project, with consultation with all RAPs including the Native Title Claimants, to ensure that all areas identified (by RPAs) with PAD will be avoided by the proposed works. Additionally, the consultation and mitigation strategies developed in partnership with the RAPs have confirmed that low density artefact scatters, that do not contain PAD, have been considered and deemed appropriate for surface collection and repatriation.
3. We understand there has been a re-alignment of the transmission line. Our client considers further surveying and test excavation is required if this results in any changes to the Project's layout.	As described above, the overhead transmission line proposed in the EIS (Umwelt, 2022) has been removed from the Project. The approval and construction processes for the transmission line will now be the responsibility of the network operator and will be subject to a separate planning process.
4. Our client requires the issues raised by Heritage NSW in relation to compliance with *National Parks and Wildlife Act 1974* be followed. Notably, as per section 89A of the *National Parks and Wildlife Act 1974*, please ensure that all sites, including untested areas of PAD, have been registered with AHIMS.	All sites have been registered on AHIMS in compliance with the appropriate legislation and guidelines. Note, that PAD with no surface artefact expressions have not been defined as sites on the basis that it is a predictive model rather than determination. As such only areas of PAD with surface scatters have been registered on AHIMS.
5. Our client requires to be consulted and present at any salvage and test pitting in the disturbance areas during site preparation and constructions phases.	The Project Aboriginal Cultural Heritage Management Plan (ACHMP) will involve all Project RAPs, including the Native Title Claimants. The surface collection process would involve participation from those RAPs. No test or salvage excavations are proposed as such areas warranting excavation (PADs) have been avoided as per our comment 2.

Warrabinga Comments	Response
6. Our client would like to monitor all disturbance works. Our clients would like two representatives of Warrabinga to be present as monitors and their attendance and associated costs paid for by RES Group.	This is not a standard procedure and not considered an archaeological management measure. Our understanding is that Heritage NSW also do not endorse monitoring as a management or mitigation measure due to the lack of archaeological control possible for this type of method. Monitoring of areas not considered to meet the definitions of PAD is not considered warranted due to the low probability of Aboriginal objects being encountered and/or observed during construction works. Any decision to engage Project RAPs in monitoring would therefore be considered an outcome from direct negotiation between the proponent and RAPs and outside the consideration of Heritage NSW and heritage consultants.
7. Our client would like all signage to be culturally appropriate – which should be designed in consultation with our client.	The Project ACHMP will involve all Project RAPs, including the Native Title Claimants. The wording of all signage will be determined through that consultation process. We look forward to the input from your client as part of this process.
8. All employees, agents, contracts and sub-contractors involved in the Project to undergo Cultural Awareness Training.	The Project ACHMP will involve all Project RAPs, including the Native Title Claimants. The level of any further inductions/training for Project staff will be determined through that consultation process.
9. Our client also requests that RES Group consider any opportunities for land to be transferred to our client for the purposes of cultural activities. Our client would be happy to discuss this further with you.	RES' Reconciliation Action Plan details our commitment to seek partnerships with First Nations Peoples through the development and operation of our Projects. The opportunity to support ongoing cultural activities is noted and RES remains ready to resume discussions around meaningful partnership opportunities.
10. Employment opportunities for our client, in that they are given preference where possible.	Noted and understood.
11. Partnership opportunities/joint ownership or profit sharing in lieu of compensation or land transfer for our client.	Understood, though this type of commercial arrangement is not proposed for this project. This is outside the scope of the EP&A Act and should be directly discussed between Warrabinga and RES as the proponent.

5.1.10 Biodiversity

Issues regarding biodiversity were raised in 10 submissions.

Loss of Biodiversity
'Disturbing local flora and fauna.' S-51264206 *'It is a fact that solar works destroy wildlife habitats, including some protected and some endangered animals and flora. The purchase of offsetting certificates does not address the large scale destruction of wildlife in the area in and around the proposed site. Over 50 species of animals have been recorded in just a 300 metre radius of the dwelling of just one property outside Gulgong town boundary. How many of these species of animals will be killed, driven out or locked out of the 14 km^2 land that will be bulldozed and surrounded by a high wire fence? The DPE should not ignore this destruction, otherwise what does EIS mean!*' S-51070711

As highlighted throughout the EIS, avoiding impacts to areas with high ecological value has been a key consideration in the Project design and layout for the Tallawang Solar Farm, including the development of the Amended Project.

This has been achieved through strategically locating Project components on land that has been cleared and/or disturbed, with only marginal stands of isolated remnant vegetation to be cleared. The Amended Project's Development Footprint therefore consists largely of Category 1 – exempt land with some areas of derived native grassland. Remnant vegetation within the Amended Project Area, which is connected to intact remnant vegetation off site, is to be retained.

When compared to the EIS Project, the Amended Project will result in the following biodiversity impacts:

- Direct impacts to PCTs and native vegetation: reduced from 30.93 ha to 7.5 ha.
- Direct impacts to TECs: reduced from 29.9 ha to 5.53 ha.

The Amended Project will avoid approximately 107 ha of remnant woodland and derived native grassland which equates to 93.44% of remnant woodland and derived native grassland being retained within the Amended Project Area.

It is also noted that in response to concerns raised during the submissions phase by BCS, the site security fence has been realigned to improve wildlife connectivity through the site (as demonstrated on **Figure 3.1**). The revised design removes fencing from around much of the native vegetation to be retained on site and provides an open corridor for wildlife movement between the northern and western boundaries.

Biosecurity
'Bio Security concerns to remaining agricultural farms from Solar Farm and Wind Farm transiting workforce, on and off different properties.' S-50986206 '*Risk of weeds growing between solar panels and spread by wind to adjacent farms Impact on historic outlook of Gulgong Town and tourism*.' S-50995223 and S-51164544 *'bio security issues.*' S-51198208

Biosecurity concerns were addressed in the Soil, Land and Agriculture Assessment (refer to Appendix 8 of the EIS), which concluded that adequate management measures had been included in the Project design to mitigate the potential for weeds and invasive species to spread or impact neighbouring properties.

Management measures will be included in a Construction Environmental Management Plan (CEMP) and Operation Environmental Management Plan (OEMP) and would include the following:

- Inspection of all vehicles and machinery entering the Project Area and cleaning to entering the Project Area.
- Mulch containing weeds will be placed in piles separate from clean mulch, removed from site, and disposed of in accordance with weed management guidelines as soon as practicable.
- Use of appropriate fencing and signposting of areas to prevent the uncontrolled entry of people, accidental disturbance and to minimise vehicular and human traffic.
- Locking of gates to prevent unwanted vehicle, person access and disturbance.

The OEMP will also incorporate a Sheep Grazing Vegetation Management Plan as detailed in **Section 5.1.1** above, which will incorporate weed management protocols.

Movement of Wildlife
'Kangaroos' movement and black swans' movement is going to be restricted by the fencing of extensive area. Noting that Bellambi Heights is proposed next to Tallawang solar proposed site, animals cannot move across the area.' S-50995223 and S-51164544

In response to concerns raised during the submissions phase, the site security fence has been realigned in the Amended Project to improve wildlife connectivity through the site. The revised design removes fencing from around much of the native vegetation to be retained on site, and provides an open corridor between the northern and western boundaries (as demonstrated on **Figure 3.1**).

It is further noted that an unnamed council road is located between the boundaries of Tallawang Solar Farm and Bellambi Heights BESS which will provide a corridor for wildlife.

5.1.11 Waste Management

Waste related issues were raised in 7 submissions.

Waste Generation and Management
'The increasing waste stream from Australia's transition to renewable energy systems risks posing a major future waste management issue while detracting from the other benefits of renewable energy.' S-50977710
'Batteries and panels from solar farms have a limited life and once their usage is finished, create a very real problem with their disposal.' S-50986206
'The waste created from this project is astronomical.' S-51035457
'*While these solar farms are promoted as "Green", what happens to the millions of batteries and panels when they are no longer viable? They have to go somewhere, landfill*?' S-50679967
'*There is no recycling plan for the panels and it is likely they will be dumped into land fill leaching toxic chemicals into the soil and poisoning underground water*.' S-50787206

Waste Generation and Management
'Solar panels are declared e-waste in Victoria, the EU and many other jurisdictions around the world. Solar panels deteriorate, get damaged and fail, resulting in the leaching of hazardous metals and toxins into the soil and waterways, whether in-situ or if disposed of in landfill, as is still the case in NSW. Residents in SE Queensland were advised not to drink their tank water and to drain their tanks following a severe hail storm on 31/10/2020 that shattered their solar panels. The lithium batteries are also declared hazardous items. No currently economic and satisfactory recycling and disposal of the toxic materials in solar panels and batteries exist in Australia, or indeed most of the world. Will the proponent put up an indexed multi-million dollar bond to cover the huge eventual cost of decommissioning, disposal, recycling, and land rehabilitation (is this even possible?) to prove its commitment to undertake such activities? The DPE should require a suitable bond to be lodged.' S-51070711 *'I object to the Tallawang Solar Electricity Generating Works proposal because there is no 100% economic or effective recycling of either the toxic solar panels or the toxic lithium batteries.'* S-51071212

RES is committed to the waste management hierarchy and strives to avoid, reduce, reuse, recycle and recover waste wherever practicable prior to resorting to waste disposal. The key principles of waste management are well understood and can be readily and reliably implemented. It is also noted that the final waste management arrangements will in part depend on the information obtained from the detailed project design process which will specify the final equipment and materials to be used, allowing the final details of the waste streams to be understood (e.g. packaging for material delivery etc.). This information will not change the overall waste management outcomes but reinforces why the detailed management plan is typically prepared post approval. The development of the management plan will also involve consultation with all relevant waste disposal contractors/receivers available at the time of construction.

Performance against these waste management conditions and the commitments in the management plan will also be subject to independent environmental audit, providing confidence that they will be appropriately implemented and that any waste management issues would be identified.

As required by the SEARs, the measures to be implemented to manage, reuse and recycle and safely dispose of waste are described in Section 6.14 of the EIS. RES has committed to the development and implementation of a detailed Waste Management Plan (WMP) which would be prepared in consultation with DPHI and Mid-Western Regional Council prior to construction to take into account the outcomes of the detailed project design process and relevant consent conditions.

RES has also developed a draft Social and Environmental Sustainability Plan which documents how waste will be managed (refer to Appendix 17 of the Amendment Report).

5.1.12 Surface water

Issues regarding surface water were raised in 7 submissions.

Erosion
'Solar panels cause more runoff from rain causing erosion to the area where the panels are and also to the paddocks in close proximity where there are no panels. Erosion will be hard to fix where the solar panels are and more importantly the surrounding gullies and creeks will run harder and faster, causing more problems on the local roads, causeways and bridges.' S-51264206

The Water Resources Impact Assessment (WRIA) prepared for the Project and provided in Appendix 11 of the EIS assessed the potential impact on water resources as a result of the Project. The assessment included the assessment of flood risk and potential impacts and mitigation measures for erosion and sedimentation.

The results of the flood impact assessment showed that the Project Area is located outside areas of major flood hazard. Peak stormwater discharges from the Project Area may increase slightly through the creation of additional impervious areas for compacted gravel roads and some small operational buildings. However, the WRIA concluded that potential impacts to drainage features and downstream watercourses are likely to be minimal due to the relative size of the Project Area in relation to the size of the receiving catchments, and the distributed nature of minor impacts.

An Amended WRIA, including a draft soil and water management plan (SWMP), has been prepared for the Amended Project and is presented in Appendix 12 of the Amendment Report. The Amended WRIA found that there will be minimal changes to the land topography, impervious fraction and therefore runoff and groundwater infiltration are expected due to the nature and extent of proposed infrastructure.

The Soil, Land and Agriculture Assessment (SLAA) prepared for the Project and provided in Appendix 8 of the EIS assessed potential impacts on agricultural land and included a site soil survey. Due to the presence of sodic and dispersive soils within the Project Area, the risk of erosion on site due to construction activities is considered high. However, excavation of subsoils will be limited where possible, and excavated subsoils will be stockpiled and contained to avoid potential dispersion and sediment transfer. Disturbance to ground cover will be limited where possible. Maintenance of ground cover will also aid in the prevention of topsoil losses from wind erosion.

The draft SWMP (provided in Appendix 12 of the Amendment Report) will be reviewed and updated should the Project be approved. All construction and decommissioning activities for the Project will be undertaken in accordance with the final SWMP. Post approval, a Construction Environmental Management Plan (CEMP) will be prepared by RES that identifies erosion and sediment control mitigation measures prior to works commencing. Similarly, the operation of the Project would be in accordance with an OEMP that will detail measures to limit erosion during the operation of the Project.

With the implementation of appropriate soil erosion mitigation measures the SLAA considered that the long-term risks to soil, land capability and agriculture are low.

Contamination of Water Courses
'Tallawang Solar site could potentially contaminate Tallawang Creek and Wialdra Creek via run off, which could potentially be poisoned by these toxic chemicals.' S-50980956

Refer to **Section 5.1.1** above for a detailed discussion on the potential for leaching of chemicals from PV modules.

Water Use
'The EIS talks about trucking in water (3.4 ML per year, again different to the volume detailed in other EIS) to clean the solar panels, again, not very sustainable.' S-51227456

Refer to **Section 4.5.1** above for more detail on proposed water supply arrangements.

5.1.13 Hazards and Risks

Issues regarding hazards and risks were raised in 24 submissions.

Bushfire
'The bushfire risk in the area is significant. Local RFS crews cannot go into a solar farm.' S-50647707
'*We have had significant bush fires in the area in past years, these solar farms pose a dangerous risk from toxic fumes to those trying to contain fires, as well as soil contamination from burnt panel and battery residue.'* S-50679967
'This project which will be a fire threat to my town of Gulgong.' S-50733477
'PV solar systems are also prone to fires from panel and electrical equipment failures causing risk to nearby farms, native bush and the community, as accessing the fires on/near a solar site is difficult and limited for safety reasons. Gunnedah Rural Fire Service has confirmed that firefighters can only fight fires in a solar plant from the perimeter due to dangerous high voltages and the possibility of toxic gases. …. The current proposal also includes a BESS. Batteries use lead, lithium and cobalt, all of which are hazardous materials. This is of much concern to residents and the community as ordinary fire suppression measures cannot extinguish a Lithium chemical reaction fire. A fire that occurred in the 350 MW/450 MWh BESS during testing on 30 July 2021 in Geelong, Victoria shows how dangerous it can be for nearby residents. When one of the 13 tonne battery packs caught fire, it burned for three days and resulted in the evacuation of residents because of the toxic fumes generated.' S-50980956
'The fire risk plan to Gulgong town and surrounding homes is not properly assessed. There is no concrete evidence or information from local Rural fire service (RFS) confirming that the extensive solar works do not pose a risk to Gulgong town. There is no plan provided on how RFS will protect the homes near the solar works in the event of a fire, considering the fumes that the solar works will produce is there is a fire.' S-50995223 and S-51164544
'*Increased fire risk 4–7 km from Gulgong town'* S-51026223, S-51285750, S-51028218 and S-51035457
'No RFS members will enter a solar facility to undertake firefighting activities due to the obvious threat posed. This threat will be greatly increased with the proposal to share a (lithium ion) battery storage installation with the Barneys Reef Wind Farm. A recent large scale grass fire adjacent to the Beryl facility saw erratic and dangerous ground level thermal activity. The only explanation was the affect the nearby panel installation has on low level winds. This was reported and was to be investigated.' S-51175729
'The bushfire risk is too great with no plans to reduce that risk. Why should our community be at greater risk than normal if a lightning strike was to start within the locked solar farm compound the fire will have a much greater hold and no RFS personal or even helicopter pilots would attempt to extinguish with toxic gases that would be present.' S-51198208
'Concerns around the increased requirements to manage a bush or grassfire within a solar farm zone. The Rural Fire Service are unable to utilise helicopters or other large aircrafts to water bomb a solar farm, and this in turn leads to an increased risk of the spread of the fire and difficulty to contain it. I would like to note that in 1979 a bushfire burnt out 53,000 hectares of land adjacent to the proposed solar farm. To my knowledge, RES has not undergone the appropriate channels of planning approval by seeking input from the local RFS within the Mid Western Regional Council to create a bushfire or grassfire management plan for the Tallawang Solar Farm.' S-51211472
'*Grave concern with bushfires as reduced access to where the solar panels are, will make it much more difficult to contain a bushfire. Who is going to carry out maintenance to reduce fire hazard within the solar farm?'* S-51264206
'Statistically, some of the solar works will catch fire and possibly initiate catastrophic grass and bush fires resulting in property damage, and injury or death to animals and humans. Likewise Battery Energy Storage Systems catch fire and are extremely difficult to extinguish, as are turbine fires. Transmission lines, inverter and other electrical components can cause fires. All give off dangerous toxic gases, posing threats to first responders and nearby communities. Recent fires in and near the Beryl solar works demonstrate that even in relatively benign wet winter weather conditions it can still take all the available emergency resources, including three water bombing helicopters, from within a 35 km radius of the fire to still take many hours to bring under control a 60 ha grass fire from spreading into a solar works and nearby rural homes. On 7/9/2022 a grass fire occurred on the proposed site of this project. The proposal does not and most likely cannot adequately address these risks. Assurances on this proven risk cannot be allowed to side-step this risk. Sprinkler systems should be required around the entire perimeter of the site, to reduce fires entering the site or to keep fires from leaving the site.' S-51070711

A bushfire threat assessment has been completed for the Project during the EIS preparation in accordance with *Planning for Bushfire Protection* (PBP 2019) (refer to Section 6.13.3 of the EIS).

The assessment indicated that land within and surrounding the Project Area is predominately cleared agricultural land with vegetated land adjoining the western boundary. However, larger remnant vegetated areas identified as bushfire prone land located to the west and southwest of the Project Area represent a potential bushfire threat to the Project.

PBP 2019 requires solar farms to have adequate clearances to combustible vegetation as well as firefighting access and water. At a minimum a 10 m Asset Protection Zone (APZ) is required for the structures and associated buildings/infrastructure (with the APZ being maintained to the standard of an Inner Protection Area) for the life of the Project. Essential equipment for solar farms should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure during bush fire emergencies. It should also be designed and maintained so that it will not serve as a bush fire risk to surrounding land. The Preliminary Hazard Analysis (PHA) prepared for the EIS Project identified a number of hazard events involving lithium-ion batteries (LIBs) with the potential for harmful impacts.
The consequence modelling identified maximum distances to fatal impacts and injury impacts for thermal radiation, explosion overpressure and toxic gas dispersion. The PHA found that these impacts were contained within the site and that the potential for adverse impacts was associated with first responders attending a hazard event.

The impacts from hazard events associated with the Amended Project, specifically the increased BESS capacity and the location of the DC Coupled Battery Station has the potential for off-site impacts should an incident occur with a battery storage unit located adjacent to the project boundary. This will be addressed through the preparation of site-specific plans and procedures as part of the Fire Safety Study, preparation of the Fire Management Plan (FMP) and preparation of the Emergency Response Plan for the Project.

There is also the potential for adverse impacts on first responders attending a hazard event. RES is committed to the development and documentation of the site-specific plans and procedure designed to manage the residual risk presented by the Project.

A Preliminary Hazard Analysis addendum report (PHA Addendum) was prepared to review and assess the components of the Amended Project relevant to hazards and risks and is supplementary to the original Preliminary Hazard Analysis (PHA) prepared for the EIS. In particular, the PHA Addendum provides an updated assessment of the hazards and risks associated with the BESS capacity increase and the provision of an onsite TWA facility.

The assessment concluded that through the development and implementation of relevant bushfire management measures and identified hazard safeguards and controls, the potential bushfire risk associated with the Project can be appropriately managed.

Further details on proposed bushfire mitigation measures are contained in Section 6.13.3 of the EIS and a Bushfire Emergency Management Plan will be developed and implemented for the Project in accordance with PBP 2019 and in consultation with the RFS and Fire and Rescue NSW (FRNSW). The plan will identify all relevant bushfire risks and mitigation measures associated with the construction and operation of the Project.

Damage to Panels and Subsequent Contamination
'*The significance of the risk of damage (to solar panels) is evident having regard to the facts that the Central West of New South Wales contains hot spots for hailstorms, such as Armidale and Orange.*' S-50977710
'*Solar panels deteriorate, resulting in lost efficiency, total failure or even fire. They get damaged by hail, wind and fire and potentially leach their toxic chemicals into the soil and water courses.*' S-50980956
'Major damage does happen such as with the Beryl Solar plant in 2020 with impacts from heavy rain, a lightning strike, inverter damage and other failures. The contamination risks to the land and through the water courses will not be tolerated by the local community.' S-50980956
'Solar panels are NOT environmentally friendly made with a toxic mix of gallium arsenide, tellurium, silver, crystalline silicon, lead, cadmium, and heavy earth materials.' S-50980956
'I 100% objecting to this ENVIRONMENTALLY DESTRUCTIVE, LAND/WATER CONTAMINATING Tallawang Solar Electricity Generating Works + FILTHY, TOXIC BESS near the beautiful, precious town of Gulgong in the Central West.' S-51197460

Refer to **Section 5.1.1** above for a detailed discussion on the potential for leaching of chemicals from PV modules.

5.1.14 Greenhouse Gas Emissions

Issues regarding greenhouse gas emissions were raised in 4 submissions.

Greenhouse Gas Emissions
'It will make a minimal difference to reducing CO2 emissions by 2050 because it will not provide reliable power when the sun does not shine or the wind does not blow.' S-50787206
'*The cry from the "green evangelists" is that they believe, to prevent indeterminate "climate change", the man-made production of carbon dioxide (CO2) must be curtailed. This, they further believe, will be achieved by including the phasing out of fossil fuels being used in the generation of electricity and replacing that generation with wind farms and solar farms. This compilation of information from many sources, shows that this manic drive for the rolling out of "renewable energy", is a case of: Destroy the "environment" to save the "environment.""*' S-50977710
'Substantial emissions of carbon dioxide equivalents are embedded in all solar panels, lithium batteries and supporting infrastructure, as well as all the mining, processing, sea and land transport, special equipment, ongoing maintenance, and decommissioning and disposal, which studies show take years of intermittent electricity generation to offset. If manufactured in China, which is highly likely as 90% of solar panels are imported from China, the embedded CO2e is the greatest. The project lacks transparency of this fact in their proposal. As they include estimated CO2 savings numbers from the project, they must also produce verifiable embedded CO2e of their specific project. The DPE must request this information for the Tallawang project so that the net emissions benefit can be assessed.' 'All proponents claim, using the same now outdated methodology, that their proposed project in Australia will reduce annual CO2 emissions by 'x' tonnes/annum. Such claims cannot be true. Electricity generated from fossil fuels has been decreasing for many years as more non-fossil fuel generation plants have become operational. Therefore, each new proposed project must have a lesser CO2 saving than each existing operating or already approved project. A point will be reached when each new wind project actually increases CO2e as its embedded CO2e cannot be offset by its future electricity production. In addition, the stated annual CO2 saving is for the first full year of operation and therefore is not sustainable over the project's life as coal-fired plants are shut down and the solar and wind plants import spares, lubricating oil, replacement batteries and components from overseas, most likely from China, the world's largest emissions country and largest exporter of wind, solar and batteries in the world. The DPE must address this flaw in the Proponent's claim.' S-51070711
'The amount of CO2 released in all aspects of creating this project and compare it with the anticipated CO2 to be saved. with timeline.' S-51257965

The Paris Agreement is an international climate change agreement to which Australia is a party, which aims to hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. A specific focus of this agreement is to reduce greenhouse gas emissions which are directly contributing to climate change. In line with Australia's commitments under the Paris Agreement, the Commonwealth Government has committed to reduce emissions 43% below 2005 levels by 2030 and achieve net zero by 2050. Extensive research has informed the development of the Paris Agreement and the NSW climate change policy framework which indicates a move to renewable energy will assist with a reduction in greenhouse gas emissions associated with coal fired energy and reduce the impact of climate change.

Under the NSW Climate Change Policy Framework, NSW has committed to both follow the Paris Agreement and to work to complement national action. This commitment includes addressing the reduction in greenhouse gas emissions building on NSW's expansion of renewable energy.

The Project is a direct response to the NSW Government's commitment to the renewable energy transition. The Project Area is strategically located within the CWO REZ in an area with identified renewable energy source potential. The Project will contribute to the implementation of the NSW Electricity Strategy, which seeks to establish a reliable, affordable and sustainable electricity future for NSW.

The National Electricity Market (NEM) needs to rapidly transition to renewable energy to support the NSW Climate Change Policy Framework, as well as the Commonwealth Government's commitments under the Paris Agreement. At present, additional renewable energy capacity is being added to the NEM at a lower rate than that identified by the Australian Energy Market Operator as required to achieve the transition to renewable energy (Parkinson, 2023). The Project will materially assist in addressing this shortfall by delivering approximately 1.3 gigawatt-hours (GWh) of renewable energy capacity to the NEM to help replace the generation capacity which will be lost with the closure of coal-fired power stations.

Solar farms typically have a low carbon footprint. They do not emit pollution or produce emissions during operation, and they do not use fossil-fuel resources. Depending on the type of solar panel used, the energy payback period (i.e. the time taken for the energy required for the life cycle of the solar farm to equal the energy it has produced) will be between 2 and 3 years (NSW Government Climate and Energy Action, 2023 https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/shift-renewables/solar-energy).

5.1.15 Decommissioning and Rehabilitation

Issues regarding decommissioning and rehabilitation were raised in 7 submissions.

Guarantee for Decommissioning
'No guarantee that government will underwrite a guarantee for decommissioning and revegetation.' S-51198208
'Site decommissioning would need government to underwrite guarantees before this project is approved to guarantee that these solar panels and anything associated will be disposed of in the correct manner and the land rehabilitated accordingly.' S-51285736
'RES has given guarantees for the decommissioning and rehabilitation of the Tallawang Solar Farm site. These projects are regularly on sold (Beryl 3 times) and so the guarantees will need to be transferred to successive owners. And if any owner goes bankrupt these guarantees are worthless. Unless the government is prepared to underwrite these guarantees or alternatively institute a bond system these projects cannot be allowed to proceed.' S-51674456

After the Project reaches the end of its operational life, the Project would either be upgraded (pending any additional approval requirements) or decommissioned. Decommissioning would involve removing Project infrastructure and returning the development footprint to its pre-existing land use, or another land use in consultation with the landholders, as far as practicable. As agreed with the landholder some infrastructure may be retained (e.g. access tracks) where beneficial to the agreed land use.

RES or its contractors will seek to recycle all dismantled and decommissioned infrastructure and equipment, where feasible and practicable. Structures and equipment that cannot be recycled would be disposed of at an approved waste management facility in accordance with all statutory requirements.

A draft Social and Environmental Sustainability Plan has been prepared and is provided in Appendix 17 of the Amendment Report. The plan will be reviewed and updated, in consultation with the Mid Western Regional Council and DPHI, should the Project be approved.

Restoration and Rehabilitation
'Under decommissioning, the EIS states infrastructure will be removed 'as far as practicable'. This vague statement is not acceptable. When we lodged a pool development application, we couldn't make vague statements like that. It is especially important for this application to be specific due to the significant volume of waste that are being considered.' S-51227456
'The EIS states "Decommissioning would involve removing all above ground project infrastructure and returning the development footprint to its pre-existing land use". Considering the solar panel frame supports will be placed to some depth in the ground, as well as underground cabling it is only reasonable to ask if the below ground infrastructure will be removed, otherwise it will interfere with deep rooted plants, trees and some farming practices.' S-50980956
'I don't believe this land will ever be restored after use – buried cables will ensure that no company will want to be responsible.' S-51674956

As stated in the EIS, after the Project reaches the end of its operational life, the components would either be upgraded (pending any additional approval requirements) or decommissioned. The technology being utilised in renewable energy generation and storage is evolving rapidly and hence it is difficult to accurately predict the likely scenario to be employed at this time.

Nonetheless, any development consent issued for the Project would include strict conditions requiring forward planning for decommissioning and rehabilitation works at the site, a number of years prior to the cessation of operations. Such planning will be undertaken with the objectives of returning the Project Site to a safe, stable and non-polluting landform to restore the original land capability and ensure public safety.

A draft Social and Environmental Sustainability Plan has been prepared and is provided in Appendix 17 of the Amendment Report. The plan will be reviewed and updated, in consultation with the Mid Western Regional Council and DPHI, should the Project be approved.

5.1.16 Cumulative Impacts

Issues regarding cumulative impacts were raised in 16 submissions.

Cumulative Impacts on Rural Community
'I believe that the cumulative effect on residents will be detrimental to those resident's well-being and their enjoyment of their homes and properties and potentially impact the operation of their farming businesses.' S--50980956 *'There is a generational farming family in the Birrawa area that will have six solar farms and two wind farms within a 25 km radius of their home. The cumulative effect of multiple developments on that family will be immeasurable and so negative. There would be other families in the area in a similar situation. What is the Department thinking?'* S-51191460 and S-51279456

RES acknowledges that due to the designation of the CWO REZ, an increasing number of renewable energy projects and associated infrastructure projects are currently being progressed in the locality and this is concerning to local residents.

The cumulative impacts associated with the Project were addressed in detail in Section 6.16 of the EIS and in the relevant specialist sections of the report. Additional detail on the Bellambi Heights BESS project has also become available since the preparation of the EIS and is included in response to specific submissions below. Due to the nature of renewable energy projects, most of the potential cumulative impacts are associated with the construction phase (particularly traffic and social impacts) with some visual impacts that may also be cumulative in nature. Many of the other potential impacts associated with the operations phase of renewable energy projects are generally limited, due to physical separation of the projects, reduced vehicle movements, and minimal works required during this phase.

RES recognises that many social impacts associated with the Project are of a cumulative nature and therefore cannot be addressed by individual proponents in isolation. Effective management of these cumulative impacts will require action by the NSW Government as part of the implementation of the REZ, with input from all proponents. Notwithstanding this, RES has made a number of commitments, as outlined in Appendix 3 of the Amendment Report, regarding how it will manage its contribution to these cumulative impacts including a range of measures to minimise negative social impacts (such as the proposed on-site TWA as described in the Amendment Report) and maximise the positive social impacts through regional economic contributions (such as a VPA with local Councils and the Benefit Sharing Scheme) and employment benefits.

Cumulative Visual Impacts
'Cumulative impact of numerous solar works is overwhelming. There will be a sea of panels around Gulgong and this impacts the visual amenity of the town and surrounding property owners.' S-50995223 and S--51164544

The LVIA undertaken by Envisage as part of the EIS (refer to Appendix 14 of the EIS) assessed the visual impacts of the Project including the assessment of cumulative visual impacts with consideration of other approved and proposed developments in the locality. The methodology for the cumulative assessment was based on the NSW *Cumulative Impact Assessment Guidelines for State Significant Projects* (November 2021), and the UK Landscape Institute's *Guidelines for Landscape and Visual Impact Assessment* (3rd Edition).

To assess cumulative visual impact, a distance of 35 km from the Project was selected as an appropriate study area, as wind farms can be visible for a distance of up to 35 km. The NSW Cumulative Impact Assessment Guidelines refer to a distance of 8 km from a dwelling or public viewpoint to apply the cumulative tool (based on visibility research which found turbines and objects recede into the background in terms of visibility at 8 km). However the LVIA used a greater distance (35 km), to account for the visual experience of short journeys and travel through the landscape, beyond a stationary viewpoint. On rural roads, a 35 km distance would take around half an hour to drive – a relatively short, local, journey – with changing visual experiences along the route.

An Addendum to the LVIA was prepared for the Amended Project (refer to Appendix 9 of the Amendment Report) and provides an updated assessment of the cumulative visual impact. The LVIA Addendum noted that although the Amended Project would not notably exacerbate the cumulative visual impact of the Tallawang Solar Farm (as previously identified in the LVIA), there have been changes to other planned renewable energy developments in the surrounding area which would affect the cumulative visual impact of the Tallawang Solar Farm. Since exhibition of the EIS, six additional renewable energy developments are being proposed within 35 km of the Tallawang Solar Farm.

The LVIA Addendum found cumulative visual impacts would involve the following:

- Most viewpoints to the Amended Project would be affected by the proposed Barneys Reef Wind Farm, which would be seen over significantly greater distances compared to the proposed solar farms and proposed BESS, due to the anticipated 280 m height of the turbines.
- Four residential viewpoints (Jacksons Lane (VP1), 980 Puggoon Road (VP24), 146 Puggoon Road (VP210) and 312 Castlereagh Hwy (VP223)) would experience the most significant cumulative visual impact should all developments proceed. Their existing view would be affected by seeing one or more solar farms, together with BESS units or the CWO REZ infrastructure, sometimes in close proximity, and in the same viewing direction. The multiple developments would increase the proportion of their view adversely affected by infrastructure.
- Three public viewpoints would experience the most significant cumulative visual impact:
    - Puggoon Road would provide views of multiple developments in close proximity, (however, would be accessed by very few people).
    - Castlereagh Highway would provide intermittent, relatively brief, sequential views of multiple developments (rather than multiple seen at one time) along the route around 32 km long between Gulgong to Birriwa.
    - Flirtation Hill would provide views of four new developments within the same view. The solar farms would be relatively inconspicuous given their distance (over 5 km), surrounding landscape of vegetation and background ridges).

With the implementation of visual mitigation measures outlined in Appendix 3 of the Amendment Report, cumulative visual impacts associated with the Project would be minimised.

Cumulative Impacts of Tallawang Solar Farm and Bellambi Heights Solar Farm
'The EIS indicates a construction time of 34 months and predicts an average peak daily traffic movement of heavy vehicles at 270 plus an additional 300 light vehicles per day. This would be additional to the everyday heavy and light vehicle movements along the Castlereagh Highway, indicated in the EIS at 1540 / day. The adjoining BHRP project is to have an overlap construction time assumed at 18 - 24 months. It can reasonably be expected a cumulative impact of upwards of 500 heavy vehicle and 600 light vehicles movements per day plus the everyday heavy and light vehicle movements. The cumulative impact of 70% increase in daily vehicular traffic, especially heavy vehicles will increase in the road degradation (already unacceptable), increase the noise level, and increase the dangers on the road. Please note: EIS Traffic Impact Assessment (Appendix 17, 4.6 Cumulative Impacts) makes no reference to the adjoining proposed BHRP project. The TSF and BHRP proposed projects have a large accumulative traffic impact and should have been considered in the EIS.' *'From my residence I would have cumulative visual impact of 150Deg view, i.e. Beryl Solar in the south, Proposed TSF in the north, Proposed BHRP directly in front. 'The TSF / EIS focuses on the cumulative and visual impacts primarily excluding BHRP based on details not being available at the time of submission. Today, BHRP details are on public record and offer sufficient information to make reasonable assumptions to reflect a more accurate cumulative and visual impact overview. The size of the projects, the close proximity to each other, overlapping construction time, positioning alongside the Castlereagh Highway and the visual impression of 1 large solar project are the reasons I lodge this objection.'* *'Cumulative impact of TSF and BHRP in the EIS is not directly addressed in any of the following areas:* • *Local accommodation for the influx of temporary workers, expected to be in the hundreds. Gulgong has 1 small motel and limited hotel accommodation, primarily used for tourism.* • *Impact on Gulgong tourism, impression of a solar farm region.* • *Increased demands on the health system, Gulgong has 1 resident doctor.* • *Noise and dust during construction overlap.* • *Social impacts as local residents come to understand the cumulative impact of adjoining projects, with overlapping construction.* • *Property devaluation due to solar farm proximities.'* S-51129457

The Project EIS was completed in August 2022 while the Bellambi Heights BESS EIS was not completed until July 2023. The Bellambi Heights project has undergone many transitions and the current project includes a BESS and switching station only, with removal of the large-scale solar generation component that was previously included as part of the project.

The cumulative impact assessment undertaken for the Bellambi Heights BESS highlighted potential overlap in construction periods with the Project which may result in cumulative workforce demands and cumulative traffic impacts along haul routes. No direct cumulative bushfire or hazard impacts were noted due to separation distances between the Bellambi Heights BESS and the nearest Tallawang infrastructure.

It is noted that the Project has since been amended to include an on-site TWA (refer to Section 3.0 Amendment Report for details) which will resolve many of the issues surrounding the influx of construction workers to the region. Traffic impacts associated with construction personnel vehicles will also be alleviated by the proposed TWA as the majority of employees will no longer be travelling along shared transport routes to reach the Project site.

The Bellambi Heights BESS EIS assessed worst-case cumulative construction traffic impacts and determined that mid-block capacity on the Castlereagh Highway would remain at a Level of Service A, when considering baseline traffic plus the Bellambi Heights BESS, Tallawang Solar Farm and Birriwa Solar Farm.

5.2 The Project

A total of 22 submissions were received in relation to the Project, with issues varying with regards to the scale, design and component sourcing for the Project.

5.2.1 Project Design

Issues relating to the project design were raised in 12 submissions.

Scale of the Project
'Solar farms require vast areas of land to generate power' S-50977710
'The size of the project at an estimated 1,137,000 solar panels covering 1370 ha (13.7 km^2) is a massive size for the area.' S-50980956
'This project, estimated at 500 MW, is simply too big for the community of Tallawang. WE DO NOT WANT IT HERE.' S-51190711
'The size of the project is too large for the community of Tallawang.' S-51211472

As highlighted throughout the EIS, the location of the Project including the design, technology, layout and size of the Project have been developed through an iterative process and consideration of a number of alternatives by the Proponent to ensure the Project would result in maximum benefits for the locality and region in the long term, whilst minimising impacts to the environment and to Aboriginal cultural heritage during its construction, operation and decommissioning. The Project is considered to be justified and in the public interest because:

- it is suitably located in an area expressly designated for this use through the *Renewable Energy Zone (Central-West Orana) Order 2021* gazetted on 5 November 2021
- it is suitably located in a region with ideal climatic and physical conditions for large-scale solar energy generation where co-located use for livestock grazing is anticipated
- it is within close proximity of transmission infrastructure proposed by the NSW Government with adequate capacity to receive the energy proposed to be generated
- it is situated adjacent to agricultural land uses that are compatible with large-scale solar energy generation
- it would not result in significant biophysical, social or economic impacts.

RES is committed to the long-term environmental management of the land within the development footprint (i.e. 1,016 ha). At the end of the Project's investment and operational life, the development footprint would be returned to its pre-existing agricultural land use or another land use as agreed by the host landholders at that time and in accordance with any legislative requirements or restrictions.

The consequences of not proceeding with the Project would result in:

- loss of additional renewable energy supply to assist Australia in reaching the Large-scale Renewable Energy Target (LRET)
- loss of opportunity to move towards cleaner electricity generation

- loss of increased energy security and supply into the Australian grid
- loss of significant social and economic benefits created through capital investment and provision of direct and indirect employment opportunities during the construction and operation of the Project.

Project Life
'The notion that solar panels last for 35 years is a nonsense. Experts today claim only 25 years.' S-50787206

It is noted that the technology in solar panel manufacture is constantly evolving at a rapid pace. Estimates of Project life presented in the EIS were based on best available information from component manufacturers and suppliers at the time of reporting.

Should the life cycle of the components vary significantly from that proposed in the EIS, approval will be sought for replacement of components and/or a change in the decommissioning timeframe as further information becomes available.

Sourcing of Materials / Slave labour
'Importing solar panels from China (built via slave labour), using metals from the Congo (using slave labour), building endless transmission infrastructure, building endless batteries (massive increase in lithium mining) will cause irreversible environmental damage. Without subsidies this project would not exist.' S-51017210
'the sourcing of materials for this project is not ethical. Outsourcing the solar panels creates a security risk for the product, produces lots of emissions in the transport to Australia and potentially contributes to increased slavery in the Republic of the Congo and in China.' S-51035457
'Australia currently imports about 90% of its solar and battery infrastructure and components from China. Dependency on China for replacement parts poses a sovereign security risk as our new electricity system will fail if such spares and replacements are withheld, restricted or made much more expensive because we will be a captive market. Collapse of our power system will cause untold destruction of our economy and the resulting dislocation of our society. Will the proponent categorically accept, with penalties, a condition that it will not buy Chinese made solar panels, batteries or other critical components, such as inverters? The DPE must include this as a condition so as to protect Australia's sovereign security.' 'It is well documented that slave labour is used to produce components used in wind turbines, solar panels and lithium batteries. For instance, children and adults in the Democratic Republic of Congo mine cobalt and copper using artisan methods, often resulting in their poor health and even death. China is the biggest buyer of cobalt and tracing artisanal mined cobalt from industrial mined cobalt is virtually impossible. This fact cannot be dismissed by statements saying the proponent will comply with Australian and State laws on modern slavery reporting. Where is their moral stand against slavery?' S-51070711
'I object to the Tallawang Solar Electricity Generating Works proposal because I cannot support a project that relies on slave labour to provide its over a million cheap solar panels and tonnes of large-scale batteries.' S-51071212

RES is a global company, with headquarters in the United Kingdom (UK) and operations in 14 countries. The founding principles of the UK *Modern Slavery Act 2015* align with RES' values and procurement policies take account of the principles behind relevant global initiatives to ensure that modern slavery does not exist in supply chains.

RES recently joined the United Nations Global Compact to strengthen its commitment to sustainable business practices. RES periodically reviews risks in relation to modern slavery and works with suppliers to identify any component manufacturing or sourcing from countries that could be considered higher risk by reference to the latest edition of The Global Slavery Index. The vast majority of RES' project development, construction and operational activities are taking place in countries considered relatively low-risk.

The organisation's Slavery and Human Trafficking Statement is available at: https://www.res-group.com/modern-slavery/

Furthermore, the Commonwealth *Modern Salvey Act 2018* requires entities based and/or operating in Australia, with an annual consolidated revenue of more than $100 million, to report annually on the risks of modern slavery in their operations and supply chains, and to identify actions to address such risks.

The Clean Energy Council has also formed a Modern Slavery Working Group with the objective to facility the process of reporting under the *Moder Slavery Act 2018*.

5.2.2 Project Location

Concerns regarding the Project location have been raised in ten submissions.

Project should be closer to the end user
'As a landlord and ex-local who visits my Gulgong community regularly I do not believe the placement of this particular solar farm is of benefit to the community. I am all for renewables in the right place and I feel this positioning is detrimental to the surrounding township.' S-50930957
'is too far from the end users.' S-50787206
'Objectives of production of climate friendly energy can be achieved by placing these solar works in positions or areas where they do not negatively impact rural communities'. S-50995223 and S-51164544
'I object to the proposal on the grounds it is an inappropriate location for a project of this type.' S-51089212.
'I'm objecting to this solar farm due to its location.' S-51164769
'I would like to know, the 330 000 homes that RES proposes this solar farm will supply energy to, where are they? Are our locals forced to face this solar farm for the energy to be transmitted back towards the coast? If so, put the solar farm there!' S-51190711
'I object to this project as the power is not being used in the area it is generated; it needs to be generated close to where power is needed. These types of developments should be done in urban areas where the power is used, and until the urban people start to generate some power why should it be taking up valuable farm land.' S-51247459
'I believe power should be generated where it is being used' S-51258218

The NSW Government's Electricity Strategy and Electricity Infrastructure Roadmap set out a plan to deliver the State's first five Renewable Energy Zones (REZs) which will play a vital role in delivering affordable, reliable energy generation to help replace the State's existing power stations as they come to their scheduled end of operational life. The Project is located within and forms a key component of the Central-West Orana Renewable Energy Zone (CWO REZ).

The indicative location of the Central-West Orana REZ was chosen following a detailed statewide geospatial mapping exercise undertaken by the NSW Government in 2018. This initial analysis sought to identify optimal locations to host renewable energy generation around the State, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation.

Since then, EnergyCo has worked through a process to refine the geographical area of the REZ based on updated analysis and feedback from key stakeholders, including consultation and ground truthing with the CWO Regional Reference Group and REZ Technical and Commercial Steering Group (Energy Corporation of NSW, 2021).

The location of the Project was chosen by the Proponent through consideration of a number of alternatives to ensure the Project would result in maximum benefits for the locality and region in the long term, whilst minimising impacts to the environment during its construction, operation and decommissioning.

The Project location is justified and in the public interest because:

- it is suitably located in an area expressly designated for this use through the Renewable Energy Zone (Central-West Orana) Order 2021, gazetted on 5 November 2021
- it is suitably located in a region with ideal climatic and physical conditions for large-scale solar energy generation where co-located use for livestock grazing is anticipated
- it is within close proximity of transmission infrastructure proposed by the NSW Government with adequate capacity to receive the energy to be generated
- it is situated adjacent to agricultural land uses that are compatible with large-scale solar energy generation
- it would not result in significant biophysical, social or economic impacts
- it would create employment opportunities and benefits to the local and regional economy.

5.3 Justification of the Project

Issues relating to the justification of the Project were raised in 15 submissions.

5.3.1 Support

Two submissions were in support of the Project.

Transition to Renewable Energy
'I fully support the Tallawang Solar Farm Development. The Project contributes to the achievement of both State *and Federal renewable energy commitments.'* S-51018473 *'Renewable energy is the only future to cut rising fossil fuel cost and pollution. Australia is rich of solar* energy *and could have been utilized earlier in large scale in order to fight against inflation and rising energy cost , so this project should be allowed to move forward*.' S-51274459

Comments are noted.

5.3.2 Object

One submission objected to the Project.

Transition to Renewable Energy
'I object to the planned proposal'

Objection is noted.

5.3.3 Merits of the Project

Issues regarding the merits of the Project were raised in 11 submissions.

Renewable Energy Generation not Reliable and Not Environmentally Friendly
'Renewable energy has developed itself a reputation as being environmentally friendly. This report will show that this reputation is entirely undeserved. Far from improving the world around us, wind, solar, biomass and even hydropower can be highly damaging. A renewables revolution on the scale envisaged by global warming activists will see our landscapes desecrated, our fields industrialised or turned to monocultures, and our wildlife slaughtered. Far from making the world a better place, renewable energy will destroy all we hold dear.' S-50977710
'Cleaner reliable energy generation will not be the result of this project. The result of this project will be destruction of the environment, agricultural lands, increased land fill (where and how are solar panels disposed?), increased land clearing, increased extinctions and total destruction of regional communities. This developer will sell this project to a waiting queue of companies wanting to greenwash their profits.' S-51017210
'With far superior, plentiful, efficient, secure, independent Australian coal, gas & uranium readily available, it is immediately essential that the Government only approve energy plans which feature FOOD SECURITY + INDEPENDENT ENERGY SECURITY = NATIONAL SECURITY - NOT this CCP slave labour Solar production reliant, unreliable, intermittent, fake green, contaminating 1.137 million toxic Solar panel Tallawang Solar dump + toxic BESS on 1,370 ha of Agriculturally productive land.' S-51197460
'These projects claim to be green but are far from it. They are very resource and energy hungry. They actually produce more emissions in manufacture, transportation. erection and de-commissioning than they will ever mitigated from producing unreliable energy. 90% of panels are made overseas so transportation cost are enormous.' S-51278956
'Historically, industrial electricity generating solar works operating in Australia only produce electricity well under 30% on average over a year. On occasions of too little daylight on cloudy or winter days, virtually no electricity is produced. In the CWO REZ the average amount of sunlight was 13.2% less from May 2019 to April 2022. Even less sunlight fell in the equivalent six months to October 2022, which was down by 21.5%. On occasions, several days in a row had very little sunlight. The proposed project therefore cannot claim to put downward pressure on electricity wholesale prices when over 70% of the time electricity has to be provided from an alternate and very expensive source, such as a non-existent super sized BESS or eventually some pumped hydro scheme. This explains why all countries or jurisdictions globally that have over 30% wind and solar in their electricity mix have amongst the highest retail electricity prices in the world. The DPE must therefore ignore claims by the Proponent that lower electricity prices will result from their project.' S-51070711
'Whilst manufacturing a load of absolute baloney in order to pedal this fudged, fake green renewaBULL religion - the scientific facts of the full life-cycle of Solar EG Works prove they are in in no way reliable, efficient, net zero emissions, secure, safe, healthy, clean, green, sustainable, renewable or part of a circular economy.' S-51197460
'It is widely assumed that we do have adequate resources of sun and wind and we just need batteries and pumped hydro storage to fill the troughs between the peaks of intermittent supply. The next section indicates that the problem of wind supply has not been fully appreciated and the following sections signal some problems with battery storage and pumped hydro.' 'The countries that have made great strides in RE like Denmark and Germany depend heavily on neighbours to take excess power when the sun and wind are active and supply power when the local RE supply is inadequate. RE enthusiasts make much of the power that Denmark exports on good wind days but over the year Denmark imports a substantial amount, possibly as much as half of its electric power. Australia does not have the luxury of being able to draw on a menu of power sources like the nation states of the EU and the individual states in the US. This is a fundamental problem and there appears to be next to no awareness of the difficulty that this creates for our green energy transition. South Australia not an island although they aspire to independence! While the balance is shifting towards exports over imports South Australia will always depend on imported power for some of the time until the storage issue is overcome. CONCLUSION The statistics on the wind supply show that RE is not sustainable without 100% backup from conventional power until a new generation of storage technology emerges.' S-51171006

Renewable Energy Generation not Reliable and Not Environmentally Friendly
'Reliability – My property is powered by an off grid solar system with a diesel generator back up. I know first hand that we cannot rely completely on the solar. Due to the poor weather over the last 12 months I have needed to run the generator for 260 Hours. This to me shows that we cannot rely directly on Solar. I also clean my solar panels 2 times per year which increases the productivity by 20%. But cleaning the solar farm panels is something that has not been done. The solar farm never seems to be running as it should with breakdowns happening regularly. RENEWABLE IS NOT RELIABLE' S-51291706

The NSW Government has developed its NSW Climate Change Policy Framework, which aims to deliver net zero emissions by 2050, and a State that is more resilient and responsive to climate change.

The Paris Agreement is an international climate change agreement which Australia is a party to which aims to hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. A specific focus of this agreement is to reduce greenhouse gas emissions which are directly contributing to climate change. In line with Australia's commitments under the Paris Agreement, the Commonwealth Government has committed to reduce emissions 43% below 2005 levels by 2030 and achieve net zero by 2050. Extensive research has informed the development of the Paris Agreement and the NSW climate change policy framework which indicates a move to renewable energy will assist with a reduction in greenhouse gas emissions associated with coal fired energy and reduce the impact of climate change.

Under the NSW Climate Change Policy Framework, NSW has committed to both follow the Paris Agreement and to work to complement national action. This commitment includes addressing the reduction in greenhouse gas emissions building on NSW's expansion of renewable energy.

The Project is a direct response to the NSW Government's commitment to the renewable energy transition. The Project Area is strategically located within the CWO REZ and will contribute to the implementation of the NSW Electricity Strategy, which seeks to establish a reliable, affordable and sustainable electricity future for NSW.

Solar farms typically have a low carbon footprint. They do not emit pollution or produce emissions during operation and they do not use fossil-fuel resources. Depending on the type of solar panel used, the energy payback period (i.e., the time taken for the energy required for the life cycle of the solar farm to equal the energy it has produced) will be between two and three years (NSW Government Climate and Energy Action, 2023 https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/shift-renewables/solar-energy).

Public Interest
'This project is not in the public interest. It is in the interest of the developer alone, simply as a result of Government subsidies. With no Government subsidies we would not be faced with this onslaught of foreign developers destroying our environment.' S-51017210 *'I object to the Tallawang Solar Electricity Generating Works proposal because I am not convinced it will result in cheaper electricity for us or others.'* S-51071212

As discussed in **Section 5.1.7** above, the Amended Project will generate considerable economic benefits for the local and regional community while also contributing to the reduction of greenhouse gas emissions and providing sustainable electricity for NSW.

The Amended Project would provide a number of benefits at Federal, State, regional and local levels, including:

- Generating approximately 1.3 GW-h of renewable electricity per year.
- Reducing the greenhouse gas emissions for this generation capacity by approximately 1 million tonnes of CO_2 equivalent per annum (based on 0.948 t/MWh from fossil fuels). This is roughly equivalent to removing approximately 600,000 cars from the road.
- Generating a capital investment of approximately $1.3 billion during the construction phase, of which approximately $195 million in wages, contracts and other service provisions may be generated into the economy over the 36-month construction phase.
- Creating approximately 230 direct and 370 indirect FTE construction jobs in the national economy on average over the 36-month construction period, with around 13 direct FTE and 40 indirect FTE employment opportunities during the operational phase.
- Generating enough electricity to supply approximately 330,000 households on an annual basis in NSW.
- Establishing indirect benefits to local services through the construction and operation phases.
- Diversifying land use and economic activity in regional NSW.
- Providing direct benefits to the local community through community fund and benefit sharing programs in the construction and operation phases.
- Providing ongoing financial assistance through the community shared benefit scheme to ensure direct benefit from the Project to the local community, including local schools, training or education as well as grants or project support for local community, environmental, or sporting groups.

5.3.4 Alternatives to the Project

Comments regarding the alternatives to the Project were raised in four submissions.

Alternatives to the Project
'We should be maximising the use of rooftop solar. If pursued to the optimal extent, rooftop solar has the ability to substantially limit the need for solar farms, which in turn opens up the possibility of limiting the latter to locations least suited to alternative uses.' S-51089212
'The government should be promoting solar on every house in the city.' S-51247459
'Why is the government not subsidising solar panels on industrial and residential rooves in metropolitan areas?' S-51258218
'In my opinion If we are in such a mad rush to install solar energy at great cost to the nation, why aren't governments proceeding with Nuclear Power generation. There is only one answer to the energy problem we have created for ourselves and that is the provision of nuclear power and limited solar energy when applicable. this is not only to provide affordable cheaper power but also to protect our domestic consumers, our Industrial base ,and most of all I believe our defence security.' S-51256207

Large-scale solar energy developments, such as the Tallawang SSD Project are just one part of the NSW Government's Electricity Strategy (DPIE, 2019) which advocates for a mix of technologies to improve the

efficiency and competitiveness of the NSW electricity market by reducing risk, cost and process-driven delays and by ensuring investment in new energy saving, demand response and generation technologies.

The Electricity Strategy acknowledges that solar (including both large-scale and rooftop installations) and wind technologies generate electricity at low cost and without emissions, however, the ability of these technologies to dispatch electricity is dependent on the weather and time of day. The NSW Electricity Strategy states that renewables are now the most economic form of new electricity generation, with a mix of wind and solar firmed with gas, batteries and pumped hydro expected to be the most economic form of reliable electricity for the State (Graham et al., 2018). In combination, these different forms of energy generation and storage will provide sufficient dispatchable capacity to meet NSW peak demand to replace ageing coal-fired power stations and reduce greenhouse gas emissions.

Nuclear power does not currently form part of the proposed energy mix for NSW.

5.4 Procedural Matters

Issues regarding procedural matters were raised in 15 submissions.

5.4.1 Independence of Consultant

Issues regarding the independence of the consultant were raised in one submission.

Independence of Consultant
'I object to the project on the basis that Environmental and Social Impact Studies have been completed by a company that has being engaged and paid for by the project developer and therefore may be bias. At the Community consultation this was not disclosed to the community.' S-51277730

The specialist environmental studies undertaken as part of the Project, and the subsequent updates prepared for the Amendment Report, were prepared by suitably qualified and experienced experts to address all relevant Commonwealth and NSW Government guidelines and policies.

All assessments have been reviewed by the relevant government agencies and any comments regarding their adequacy have been raised and addressed in **Section 4.0**.

5.4.2 Adequacy of Assessments/Further Details Required

Issues regarding the adequacy of assessments were raised in seven submissions.

Noise Assessment
'My property is severely impacted by the project. My children's bedroom, my bedroom, kitchen, and family room have large, glazed sections all look out onto the project area. I am asking for the EIS to include my property for …. noise impact assessment.' S-50995223 and S-51164544
'Noise impact during construction to the surrounding family homes is not adequately addressed.' S-51026223, S-51285750 and S-51028218
'*The noise impact during construction and caused by turning panels to the surrounding family homes is not adequately addressed.*' S-51035457

The Noise and Vibration Impact Assessment (NVIA) included as Appendix 15 of the EIS was prepared in accordance with the following guidelines and legislative requirements:

- *Noise Policy for Industry* (NPfI), Environment Protection Authority (EPA), 2017.
- *Interim Construction Noise Guideline* (ICNG), NSW Department of Environment and Climate Change (DECC), 2009.
- *Road Noise Policy* (RNP), Department of Environment, Climate Change and Water (DECCW), 2011.
- *Assessing Vibration: A Technical Guideline* (the vibration guideline), Department of Environment and Conservation (DEC), 2006.

The NVIA included the assessment of impacts to over 200 residential receivers in the area surrounding the Project. Address and lot/DP details of all assessed receivers are provided in Appendix A of the NVIA (refer to Appendix 15 of the EIS).

Results were summarised within the main body of the NVIA (Table 5.2) for those receivers where the predicted noise levels were greater than the daytime construction noise management level. Therefore, the absence of a receiver in Table 5.2 of the NVIA indicates that there will be no exceedance of construction noise levels at that location. For those locations listed in Table 5.2, a number of noise mitigation and management strategies were proposed in order to reduce the potential noise impacts on those receivers.

There were no predicted exceedances of operational noise criteria at any sensitive receivers.

Visual Assessment
'The houses on Black Lead Lane will be severely impacted visually as they are on a hill and overlooking the project site. They were not assessed for visual impact. My property is severely impacted by the project. My children's bedroom, my bedroom, kitchen, and family room have large, glazed sections all look out onto the project area. I am asking for the EIS to include my property for visual …. impact assessment.' S-50995223 and S-51164544
'*It should be incumbent on the Proposer to provide 3D imaging of the infrastructure from various viewpoints to give a realistic view of the proposal rather than a convenient one-dimensional image which intentionally fails to provide the real picture.*' S-51175729
'*I would expect that an on the ground inspection of affected properties in the company of owners would be carried out.*' S-51674956

In accordance with the SEARs, the NSW State Government's Large-Scale Solar Energy Guideline (December 2018) (the Guideline) was considered in the preparation of the LVIA for the Project (refer to Appendix 14 of the EIS). The Guideline sets out general principles for better site selection, including consideration of site visibility and visual impacts. The Guideline was updated in 2022 however was not published at the time of submission of the EIS, therefore the 2018 Guideline was applicable at that time.

The methodology applied in the LVIA was tailored to the Project, based on principles presented in several well-regarded visual assessment guidelines used by government authorities and professional organisations in Australia and internationally, including:

- 'Guideline for Landscape Character and Visual Impact Assessment - Environmental Impact Assessment Guidance Note EIA–N04' Transport for NSW, 2020.
- 'Guidance Note for Landscape and Visual Assessment', Australian Institute of Landscape Architects, 2018.

- ‘Guidelines for Landscape and Visual Impact Assessment,’, the United Kingdom’s Landscape Institute and Institute of Environmental Management and Assessment, 2013.
- ‘The Renewable Energy Landscape, Preserving scenic values in our sustainable future’, Apostle, Palmer, Pasqualetti, Smardon and Sullivan, 2017.
- ‘Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands’, United States Department of the Interior, 2013.
- ‘Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects’, Sullivan and Meyer, for United States Department of the Interior, 2014.
- ‘Cumulative Impact Assessment Guidelines for State Significant Projects’, NSW Government, 2021.

Locations with potential visibility to the solar farm were initially identified by preparing a zone of theoretical visibility (ZTV). A ZTV is determined entirely by landform (digital terrain models) and presents the potential maximum area of visibility, without accounting for screening or obstruction by vegetation, buildings, or other features in the landscape. Thus, a ZTV can overstate actual visibility, and therefore field investigations are subsequently undertaken to verify the actual extent of visibility. Extensive ground-truthing was undertaken to supplement the digital data to achieve as accurate an appreciation as possible of potential visibility from surrounding viewpoints. Solar farm visibility generally becomes minimal beyond 5 km; however the radius was extended to 8 km to include the nearby historic town of Gulgong. The ZTV was based on the potential scenario of 5 m high solar PV panels (5 m above natural ground level), and an initial solar panel layout (September 2021) that extended over a slightly larger area than currently proposed. Thus, the extent of visibility shown in Figure 5-1 of the LVIA (refer to Appendix 14 of the EIS) represents the ’worst case’.

While parts of Black Lead Lane are included in the extent of potential visibility on Figure 5-1 of the LVIA, residences in this locality were not individually identified in the assessment due to their distance from the Project (over 3 km) and based on the outcomes of the field assessment process. The representative viewpoints in the intervening area between the Project and Black Lead Lane, for example VP210 and VP241, were both assessed as having a low visual impact immediately after construction and a low residual visual impact approximately 3 to 5 years following growth of landscape screen planting.

As noted in Section 5.3 of the LVIA, five private properties were visited during the field assessment. These properties were identified as being representative of the range of views available and among the closest and potentially most visually affected private viewpoints. Attempts were made by RES to gain access to an additional four properties (also potentially visually affected) however contact was unable to be established. While visiting the five private properties, photographs were taken from viewpoints identified by the resident as potentially the most impacted by the Project. Photographs were taken using a full-frame sensor digital camera with a fixed 50 mm lens and GPS positioning to ensure compatibility of photography for all viewpoints, and to minimise optical distortion. Following the site inspection, contact was made with one additional private property and the resident provided their own photographs of their view for the assessment.

Waste Assessment
‘*The waste created from this project …. has not been adequately addressed*.’ S-51035457

As required by the SEARs, the measures to be implemented to manage, reuse and recycle and safely dispose of waste were described in Section 6.14 of the EIS. RES has committed to the development and implementation of a detailed Waste Management Plan (WMP) which would be prepared in consultation with DPHI and Mid-Western Regional Council prior to construction, to take into account the outcomes of the detailed project design process and relevant consent conditions.

Environmental Assessment Process
'The EIS references the transmission line as part of the Central-West Orana renewable energy zone, and detailed how the proposed development will connect into transmission line. I strongly question how can this application be considered when the transmission line application has not even been lodged with the department?' S-51225754

As outlined in **Section 3.1**, the Project as presented in the EIS included connection infrastructure between the Project's proposed switchyard/substation and the proposed CWO-REZ transmission line. The connection infrastructure involved a newly proposed 330 kV overhead electricity transmission line of approximately 13 km long, traversing through the proposed Barneys Reef Wind Farm (as detailed in Section 3.3.5 of the EIS).

In late 2023, EnergyCo submitted an EIS for the CWO-REZ Transmission Project for the construction and operation of electricity transmission infrastructure, energy hubs, switching stations, and other ancillary works required to connect renewable energy generation projects within the CWO-REZ to the existing electricity network (EnergyCo, 2023). The CWO-REZ Transmission Project includes the connection infrastructure proposed as part of the Tallawang SSD Project EIS.

In particular, the CWO-REZ Transmission Project EIS states (p 3-6):

'The 330 kV network infrastructure from the Merotherie Energy Hub would include:

- a 330 kV transmission line extending around 17 kilometres south from switching station M6 at Tallawang (referred to as the Tallawang south connection). The connection would extend for around eight kilometres to switching station M8 to provide a connection to the proposed Barneys Reef wind farm. From switching station M8, the Tallawang south connection would continue further south to switching station M9 to provide a connection to the proposed Tallawang solar farm.'

As a result, the proposed connection infrastructure no longer forms part of the Tallawang SSD application. All impacts associated with the construction and operation of the connection infrastructure are also no longer applicable to the Amended Project as these are covered in the CWO-REZ Transmission Project EIS.

Updated environmental assessments provided in Section 6 of the Amendment Report reflect this change and the associated reduction in impacts where relevant.

5.4.3 Consultation Process

Issues regarding the consultation process were raised in three submissions.

Inadequate Consultation with Community
'*I was not included in the impacted property owner's consultation process*.' '*Although my property is impacted, I have not heard anything about the said shared Benefit Strategy*.' S-50995223 and S-51164544

Inadequate Consultation with Community
'Along with several of our neighbours we will all see most of the proposed site of the Tallawang Solar Works from our homes. None of us were directly approached by the developer.' S-51070219 *'There has been a lack of appropriate wider community engagement with regards to the social impacts of the solar farm.'* S-51211472

RES recognises the importance of stakeholder engagement to the success of this Project and has been liaising with stakeholders since landholder discussions commenced in 2020. In addition to community stakeholders, ongoing consultation has been undertaken with the Mid-Western Regional Council, Warrumbungle Shire Council, government agencies, functional stakeholders (e.g. service providers), businesses and various non-government organisations and interest groups. This involved a comprehensive engagement process undertaken with the Aboriginal community in regard to the Project (set out in detail in Section 5.3 of the EIS). This engagement has informed the design of the Project and has been ongoing throughout the assessment process, and if the Project is approved, the engagement will be ongoing during the life of the Project.

In addition to the engagement undertaken by RES, further engagement has been undertaken as part of the Social Impact Assessment (SIA) undertaken by Umwelt for the EIS Project following the requirements of the NSW Government guidelines and assessment standards including, but not limited to, the NSW DPIE Social Impact Assessment Guideline for State Significant Projects (2021) or 'the SIA Guideline', the Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021) and the SEARs. An overview of the Stakeholder Engagement Program including the identified stakeholders, engagement undertaken, and the outcomes of the consultation process is provided below. Further detail is provided in the SIA (refer to Appendix 6).

RES has continued to engage with the community in relation to the Amended Project. The engagement conducted at this time specifically covered details regarding the Amended Project including the TWA Facility.

Engagement activities undertaken during the development of the Amended Project are summarised in **Table 5.2**. These activities 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 5.2 Community Engagement Following Exhibition of EIS

Activity	Date	Details
Neighbour Engagement	September 2022 to February 2024	Ongoing liaison with impacted neighbours regarding the impact agreements, including phone calls to near neighbours to advise them of the TWA facility and to invite them to the November 2023 community drop-in sessions.
Community drop-in session	15 to 16 November 2023	Two community drop-in sessions were held by RES to engage with the broader community and solicit feedback regarding the Amended Project. Two sessions were held in Gulgong. These were undertaken at different times to align with the differing needs of the community. A total of 22 people attended the drop-in sessions.

Activity	Date	Details
Meetings	November 2023	RES met with a representative of the Mudgee police to discuss public safety and community impact issues associated with the Amended Project.
Media Release	November 2023	RES published a media release of the Amended Project and an advertisement for the Community drop-in sessions in the Gulgong Gossip and Mid-Western Mail as well as a radio release on 2 MG.
Project Newsletter	November 2023	A Project Newsletter providing an update on the Amended Project, including an invitation to the Community drop-in sessions, were delivered to 1,835 households in the Gulgong, Tallawang and Dunedoo areas. The Project Newsletter were also handed out to stakeholders at the Community drop-in sessions.
In person event	16 February 2024	RES hosted a stall at the Gulgong Show in February 2024.

Consultation with the community and key stakeholders is ongoing and will continue prior to and during construction and operation of the Amended Project. Ongoing consultation activities will aim to provide the community and stakeholders with awareness of construction processes and activities, updates on the proposed timing of construction and opportunities for ongoing feedback and input throughout construction and operations.

The Amended Project website, email address and free call number will continue to be available prior to and during construction and operations.

Engagement during operations will focus on maintaining regular communications with the community including reporting back to the community on compliance obligations, operations and generation updates, benefit sharing programs and promotion of community initiatives or events.

Environmental Management Plans (EMPs) will address the procedures for receiving, evaluating and responding to complaints, environmental incidents and non-conformance during the construction and operation of the Amended Project.

Objection from Local government
'Our local shire, Mid-Western Regional Shire, has raised many issues which are of concern to them, and the Warrumbungle Shire has lodged a formal objection to this as well as other renewable projects.' S-51217978

Issues raised in submissions by Mid-Western Regional Council and Warrumbungle Shire Council have been addressed in **Section 4.12** and **Section 4.14** above.

5.5 Issues Beyond the Project Scope

Issues beyond the project scope were raised in 12 submissions.

5.5.1 Other Solar Farms in the Region

Issues regarding other solar farms in the region were raised in five submissions.

Beryl Solar Farm
'The current solar farm at Beryl has not fulfilled its promise of green screening or distance from local roads so there is no reason to believe this new project will fulfill its obligations once it gets the green light.' S-50733477
'Although the proposal includes vegetation screening, this has NOT been followed through with the Beryl Solar Farm which was built on a nearby road. Vegetation screening in our climate requires dedicated watering and follow-up which was not done. There has been no enforcement of this with the Beryl Solar Farm, so no reason to believe vegetation screening for the Tallawang solar farm is anything but a soft sell.' S-50647707
'Following personal involvement in the existing Beryl Solar Farm project I harbor (I believe) reasonable concerns concerning the proposal to construct this project. These concerns are based on actual experience as to the construction and operation of such a facility. As this proposal will be several times larger than the Beryl facility the following dot point observations, in my opinion, can only be magnified.' S-51175729
'The bad solar saga in our area continues. They have broken the backbone of our road. It will never be the same. There is no community benefit fund, no pasture, no grazing of animals, no firebreak and big problems with runoff for neighbours because they felled every tree, filled every dam and flattened every contour bank. They ignored recommendations made by the local soil conservation service.' S-51191460 and S-51279456

The Beryl Solar Farm was granted approval in December 2017 for the construction, operation and decommissioning of a photovoltaic solar farm located approximately 5 km west of Gulgong and 5 km from the Project. The Beryl Solar Farm is also located within the CWO REZ.

The Beryl Solar Farm is not affiliated with the Project, however the proximity of the two projects has been considered in the assessment of cumulative impacts (refer to Section 6.16 of the EIS). The past experiences of the local community with the construction of Beryl Solar Farm should not be viewed as an indicator of future performance of the Tallawang Project.

5.5.2 Policy and Planning

Issues regarding policy and planning were raised in three submissions.

Government Policies and Strategic Planning
'As Australia rushes headlong into the area of "Green Energy" to appease those apposed to other forms of power production and the unrealistic promise of cheaper power those involved fail to recognise the detrimental affect on the populations of areas being used as dumping grounds for such facilities and the greenhouse gasses created in the manufacture, transport and installation of them.' S-51175729
'NSW DPE approvals are contrary to 'Caring For Country' & have defied all the Principles of ESD - deceitfully ignoring the likely toxic contamination that will inevitably result.' S-51197460
'Feasibility – Whilst I understand that the government is striving for reduced carbon emissions, there has been little thought into the big picture. Its only when the solar farm is constructed that it actually becomes green energy, with the construction of a solar farm it needs to be considered how much carbon is produced in the process including mining of raw materials, freight overseas, the coal powered energy used to manufacture all materials such as steel, cement, glass, copper, plastics, cable etc and then the transport of these materials back to Australia. Just because this carbon footprint is not all been made in Australia doesn't mean it shouldn't be considered. In our local area we have many productive coal mines which mostly is exported to supply coal to other countries to burn and produce power.' S-51291706

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable and sustainable electricity future that supports a growing economy. The strategy responds to the challenges of an ageing energy generation and transmission system and supports a new affordable and reliable energy system to meet the state's energy needs and emissions reduction targets.

The Strategy will do this by:

- delivering Australia's first coordinated Renewable Energy Zone in the Central-West Orana region
- saving energy, especially at times of peak demand via the Energy Security Safeguard
- supporting the development of new electricity generators
- setting a target to bolster the state's energy resilience
- making it easier to do energy business in NSW (NSW Government, 2023).

As stated in **Section 5.3.3** the Project is a direct response to the NSW Government's commitment to the renewable energy transition. The Project Area is strategically located within the CWO REZ and will contribute to the implementation of the NSW Electricity Strategy.

5.5.3 Post Approval Compliance

Issues regarding post approval compliance were raised in four submissions.

No Mechanism for Post Approval Compliance
'There is virtually no mechanism to ensure all commitments and conditions are satisfactorily performed; this must be addressed; e.g. decommissioning/rehabilitation bonds must apply.' S-51070219
'It would appear that, following completion of the installations, there is no accountability as to the actual amount of power being produced. Looking down on the Beryl project there are regularly large tracks of panel inoperative due to mechanical failure. One such event took nearly four months to reactivate (apparently) due to replacement parts being unavailable.' S-51175729
'I have issues with the way neighbours are expected to police these developments. I have lost count of the number of letters we have had to write to the DPIE and developers concerning issues with the (Suntop) *solar farm.*' S-51191460 and S-51279456
'*Conditions of approval – I have witnessed first hand that goal posts are moved to suit the developer. What is set out in the approval conditions is not closely monitored and extensions of time are requested to fur fill the original timeframes proposed, such as screen planting.*' S-51291706

Consent authorities have broad powers under the *Environmental Planning and Assessment Act 1979* (EP&A Act) to investigate whether development is being carried out in accordance with the conditions of a development consent. Where a breach is identified, consent authorities may issue an order requiring the breach to be rectified (known as a development control order) or can commence prosecution proceedings against the person responsible. In recent years, the DPHI has significantly intensified its compliance effort in relation to State Significant Development. The outcomes of its regular compliance audits are published on its website.

5.5.4 CWO REZ

Issues regarding the CWO REZ has been raised in 12 submissions.

Cumulative Impacts of the REZ
• *'Why can't these works be shared among different communities to reduce cumulative noise and visual impact on one rural community? The government should consider the rural communities wellbeing just the same as they consider the wellbeing of people in the cities.'* S-50995223 and S-51164544 • *'The cumulative impact of dozens of "energy" projects in the area will lead to the destruction of the community, both environmentally and socially.'* S-51017210 • *'The cumulative impacts of so many huge and intrusive projects on the lives of the people who have to live with the consequences of the approval of "not fit for purpose" projects.'* S-51070219 • *'I would not even say my objection to solar facilities of this sort in this region is absolute, as various regions across NSW may need to be tasked with shouldering the burden of the transition to renewables, but it is concerning that this project is proposed in addition to a number of other solar farms already in place in the local region or in development. In the interests of limiting impacts to the local area to those from existing solar farms and others further progressed in their development, I would urge that this particular project be relocated.'* S-51089212 • *'I live with 15 km of the proposed project, and the cumulative effect of this solar farm as well as extensive transmission lines, and numerous other wind and solar projects is enormous. The CWO REZ has deemed our locality appropriate for multiple renewable energy projects, however this land is prime agricultural land and these projects will have significant detrimental impacts on the neighbouring landholders' finances, social life, farm management, and lifestyle.'* S-51190711 • *'The cumulative impacts of renewaBULL ruination already present are an absolute disgrace!'* S-51197460 • *'The cumulative effects of all solar and wind projects and the transmission lines within the CWO REZ.'* S-51211472 • *'This project cannot be viewed in isolation; it must be considered as part of all of the projects within the CWO REZ, and the effects of such a enormous amount of agricultural land being used for renewable energy is going to have a devastating effect on the local community.'* S-51217978 • *'The cumulative impacts of the REZ transmission line have not yet been determined. From an analysis of the recently approved solar farms in NSW it takes at least two hectares of agricultural land to deliver 1 megawatt of power. For the development of this REZ, in excess of 10 gigawatts it will result in significant impacts on many communities and more importantly the NSW economy. Removing that amount of agricultural land will have direct and indirect economic impacts felt well into the future. Without the transmission line being determined, it is too early to appropriately determine the cumulative impact.'* S-51225754 • *'Within a sixty kilometre radius of our house there are numerous renewable projects; this is not acceptable.'* S-51247459 • *'All the projects in the REZ are causing major problems in our small communities; there are divisions forming between friends, neighbours and families which could be avoided!'* S-51258218 • *'The cumulative effect of the multitude of 32 and counting existing, under construction and proposed wind, solar & BESS projects will severely impact our ability to feed ourselves.'* S-51278956 • *'The proponent proposes to build an industrial solar works complex over a period of about three years. The construction of the solar works and associated infrastructure, together with potentially another 10 known proposed major projects (as per REZ Transmission Project map) will negatively impact the towns, residents, tourists, road users and road surfaces for many years, as much of the same route from Newcastle Port to the CWO REZ will be used. The 11 known major projects currently in planning/approved total a claimed combined installed capacity of 7,160 MWac. These projects will depend on the proposed new 180 km (++) 500/330 kv transmission lines and energy hubs being built a few kilometres north of Gulgong and south of Dunedoo. The CWO REZ was to be a pilot ("guineapig") of up to 3,000 MWac. Clearly, the cumulative negative impacts of so many concentrated projects for a decade or more will severely hurt Gulgong and Dunedoo property owners and townspeople the most. The DPE must reject this project proposal as it adds to already massive cumulative impact of the already existing/approved and proposed similar projects.'* S-51070711

The NSW Government's Electricity Strategy and Electricity Infrastructure Roadmap set out a plan to deliver the State's first five Renewable Energy Zones (REZs) which will play a vital role in delivering affordable, reliable energy generation to help replace the State's existing power stations as they come to their scheduled end of operational life. The Project is located within and forms a key component of the Central-West Orana Renewable Energy Zone (CWO REZ). Other REZs are located in the New England, Hunter-Central Coast, Illawarra and South-West regions of NSW.

The indicative location of the CWO REZ was chosen following a detailed state-wide geospatial mapping exercise undertaken by the NSW Government in 2018. This initial analysis sought to identify optimal locations to host renewable energy generation around the State, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation. Since then, the EnergyCo has worked through a process to refine the geographical area of the REZ based on updated analysis and feedback from key stakeholders, including consultation and ground truthing with the CWO Regional Reference Group and REZ Technical and Commercial Steering Group (Energy Corporation of NSW, 2021).

Since mid-2022, EnergyCo has been investigating how potential cumulative impacts will be mitigated within the CWO REZ while also providing long-term benefits to the community. These investigations include an extensive program of engagement with local councils, government agencies and other key stakeholders to understand key local issues and priorities in the REZ.

EnergyCo has carried out detailed investigations into a number of areas which are priorities for the community, such as road upgrades, training and skills development, workforce accommodation, telecommunication improvements and waste management. The key findings of these investigations to date, including potential challenges and opportunities, are outlined in the 2023 report *Central-West Orana Renewable Energy Zone – Coordinating community impacts and benefits in the REZ* (Energy Corporation of NSW, 2023).

6.0 Updated Justification and Evaluation of Merits

This Submissions Report has been prepared to address the issues raised by the agency and community submissions during public exhibition of the EIS.

Several amendments are being proposed to the Project as presented in the EIS, in response to submissions received on the EIS, ongoing consultation and progression of the Project design. These include:

- Inclusion of a 400-bed TWA facility with the Project Area, supported by an AES.
- Updated treatment for the proposed intersection upgrade on the Castlereagh Highway at the newly proposed site access.
- Removal of the 13 km overhead transmission line traversing through the Barneys Reef Wind Farm to the north of Tallawang, as this is now proposed as part of the CWO-REZ Transmission Project.
- Increased BESS capacity from 200 MW/400 MW-h to 500 MW/1000 MW-h.
- Minor layout refinements, including:
    - removal of the northern substation option
    - installation of additional solar panels (covering a further 1.61 ha) within already disturbed areas
    - inclusion of dedicated TWA access through the solar farm site
    - realignment of the security fence line to improve wildlife connectivity.
- Minor readjustment of the Project Area boundary due to above amendments.

These design changes have been assessed through an updated impact assessment and it is considered that the Project amendments would not result in any unacceptable impacts and that the Project can comply with statutory requirements and relevant standards, policies and guidelines. For most environmental aspects there would be no substantial change to impacts and/or a positive outcome as a result of the Amended Project when compared with the Project presented in the EIS.

The Project is a direct response to the NSW and Commonwealth's Government's commitments to transition to renewable electricity generation in NSW and forms a key component of the CWO REZ, an area confirmed as suitable for renewable energy development by the NSW Government. The proposed Project amendments do not change the overall strategic context of the Project. The National Electricity Market (NEM) needs to rapidly transition to renewable energy to support the NSW Climate Change Policy Framework, as well as the Commonwealth Government's commitments under the Paris Agreement. At present, additional renewable energy capacity is being added to the NEM at a lower rate than what the AEMO has identified as required to achieve the transition to renewable energy (Parkinson, 2023), and the NSW government is looking to streamline renewable energy development approvals in the planning system to deliver the transition to renewables under the Energy Roadmap.

The Project will materially assist in addressing this shortfall by delivering approximately 500 MW of renewable energy capacity to the NEM to help reduce the need to keep coal fired power stations like Eraring Power Station online beyond their current committed retirement date. The Project will also support the firming and storage of renewable energy in NSW through the development of a 500 MW/1000 MW-h BESS within the Project Area.

The Project will also contribute significant capital investment within the Mid-Western Regional LGA, by providing indirect benefits to local services throughout the life of the Project (e.g. indirect employment creation in local and regional economies would include jobs supported through transportation, trade supplies, services, accommodation, catering, retail services, etc.), delivering additional income to host and other associated landowners, and providing benefits to the local community through the implementation of the proposed VPA with Mid-Western Regional Council.

The Project represents an essential part of the energy transition with a fully optimised constructible design. The Amendment Report confirms that, while there will be some unavoidable impacts from the Project, the extent of these impacts have been minimised through the design process as far as practicable and appropriate management, mitigation and offset measures have been committed to address the residual impacts.

7.0 References

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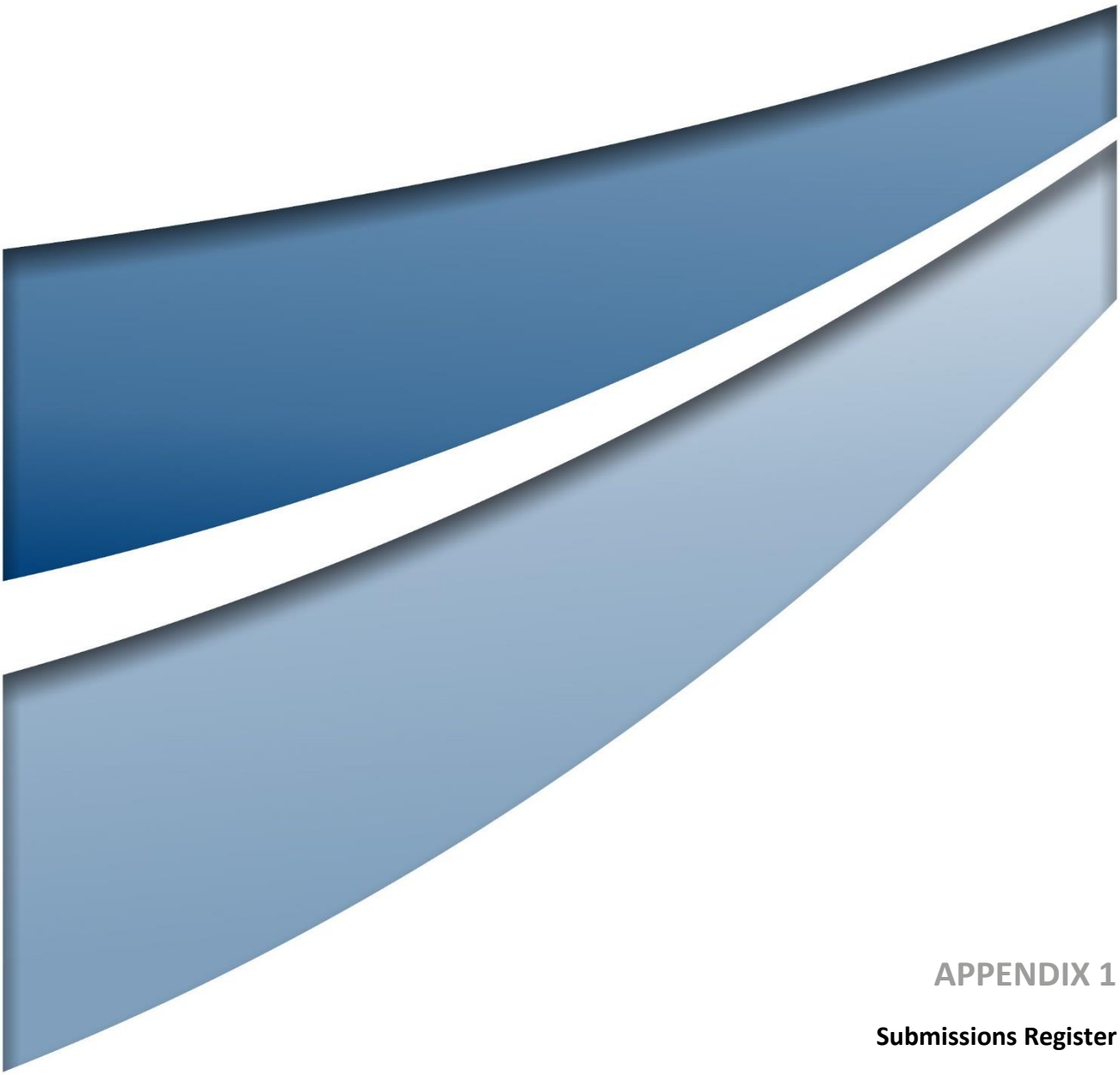

APPENDIX 1

Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
Public Authorities	Australian Rail Track Corporation			Comment	Section 4.1
	Biodiversity Conservation and Science Directorate			Comment	Section 4.2
	Heritage NSW			Comment	Section 4.3
	Crown Lands			Comment	Section 4.4
	Department of Planning, Housing, and Infrastructure Water			Comment	Section 4.5
	Department of Planning, Housing, and Infrastructure Hazards			Comment	Section 4.6
	Department of Primary Industries - Agriculture			Comment	Section 4.7
	Department of Primary Industries - Fishing			Comment	Section 4.8
	Fire and Rescue NSW			Comment	Section 4.9
	NSW Rural Fire Service			Comment	Section 4.10
	Transport for NSW			Comment	Section 4.11
	Department of Regional NSW - Mining, Exploration and Geoscience - Geological Survey of NSW			Comment	Section 4.13
	TransGrid			Comment	Section 4.15
	NSW Evironmental Protection Authority			Comment	Section 4.16
Councils	Mid-Western Regional Council			Object	Section 4.12
	Warrumbungle Shire Council			Object	Section 4.14
Organisation	Warrabinga-Wiradjuri #2, #6 and 7 native title claimants			Object	Section 5.1.9
Community		S-50549228	SE-50549229	Object	Section 5.1.1
		S-50647707	SE-50647708	Object	Section 5.1.5, Section 5.1.7, Section 5.1.13, Section 5.5.1
		S-50679967	SE-50679968	Object	Section 5.1.1, Section 5.1.3, Section 5.1.5, Section 5.1.7, Section 5.1.11, Section 5.1.13
		S-50733477	SE-50733478	Object	Section 5.1.1, Section 5.1.7, Section 5.1.13, Section 5.5.1
		S-50787206	SE-50787207	Object	Section 5.1.1, Section 5.1.7, Section 5.1.11, Section 5.1.14, Section 5.2.1, Section 5.2.2
		S-50930957	SE-50930958	Object	Section 5.1.1, Section 5.1.5, Section 5.2.2
		S-50977710	SE-50977711	Object	Section 5.1.11, Section 5.1.13, Section 5.1.14, Section 5.2.1, Section 5.3.3
		S-50980956	SE-50980957	Object	Section 5.1.1, Section 5.1.3, Section 5.1.5, Section 5.1.7, Section 5.1.12, Section 5.1.13, Section 5.1.15, Section 5.1.16, Section 5.2.1
		S-50986206	SE-50986207	Object	Section 5.1.1, Section 5.1.3, Section 5.1.5, Section 5.1.7, Section 5.1.10, Section 5.1.11
		S-50995223	SE-50995224	Object	Section 5.1.1, Section 5.1.2, Section 5.1.6, Section 5.1.7, Section 5.1.8, Section 5.1.10, Section 5.1.13, Section 5.1.16, Section 5.2.2, Section 5.4.2, Section 5.4.3, Section 5.5.4
		S-51017210	SE-51017211	Object	Section 5.1.7, Section 5.2.1, Section 5.3.3, Section 5.5.4
		S-51018473	SE-51018474	Support	Section 5.3.1
		S-51022010	SE-51022011	Object	Section 5.1.1
		S-51026223	SE-51026224	Object	Section 5.1.1, Section 5.1.2, Section 5.1.5, Section 5.1.7, Section 5.1.8, Section 5.1.13, Section 5.4.2
		S-51028218	SE-51028219	Object	Section 5.1.1, Section 5.1.2, Section 5.1.5, Section 5.1.7, Section 5.1.8, Section 5.1.13, Section 5.4.2
		S-51035457	SE-51035458	Object	Section 5.1.1, Section 5.1.5, Section 5.1.7, Section 5.1.8, Section 5.1.11, Section 5.1.13, Section 5.2.1, Section 5.4.2
		S-51070219	SE-51070220	Object	Section 5.1.7, Section 5.4.3, Section 5.5.3, Section 5.5.4
		S-51070711	SE-51070712	Object	Section 5.1.1, Section 5.1.10, Section 5.1.11, Section 5.1.13, Section 5.1.14, Section 5.2.1, Section 5.3.3, Section 5.5.4
		S-51071212	SE-51071213	Object	Section 5.1.1, Section 5.1.6, Section 5.1.11, Section 5.2.1, Section 5.3.3

		S-51089212	SE-51089213	Object	Section 5.1.1, Section 5.1.8, Section 5.2.2, Section 5.3.4, Section 5.5.4
		S-51129457	SE-51129458	Object	Section 5.1.16
		S-51164544	SE-51164545	Object	Section 5.1.1, Section 5.1.2, Section 5.1.6, Section 5.1.7, Section 5.1.8, Section 5.1.10, Section 5.1.13, Section 5.1.16, Section 5.2.2, Section 5.4.2, Section 5.4.3, Section 5.5.4
		S-51164769	SE-51164770	Object	Section 5.1.7, Section 5.2.2
		S-51171006	SE-51171007	Object	Section 5.3.3
		S-51172208	SE-51172209	Object	Section 5.1.7
		S-51175729	SE-51175730	Object	Section 5.1.7, Section 5.1.13, Section 5.4.2, Section 5.5.1, Section 5.5.2, Section 5.5.3
		S-51190711	SE-51190712	Object	Section 5.1.1, Section 5.1.3, Section 5.1.7, Section 5.2.1, Section 5.2.2, Section 5.5.4
		S-51191460	SE-51191461	Object	Section 5.1.7, Section 5.1.16, Section 5.5.1, Section 5.5.3
		S-51197460	SE-51197461	Object	Section 5.1.13, Section 5.3.3, Section 5.3.3, Section 5.5.2, Section 5.5.4
		S-51198208	SE-51198209	Object	Section 5.1.3, Section 5.1.5, Section 5.1.7, Section 5.1.10, Section 5.1.13, Section 5.1.15
		S-51208221	SE-51208222	Object	Section 5.1.5
		S-51211472	SE-51211473	Object	Section 5.1.1, Section 5.1.7, Section 5.1.13, Section 5.2.1, Section 5.4.3, Section 5.5.4
		S-51217975	SE-51217976	Object	Section 5.1.1, Section 5.1.3, Section 5.1.5, Section 5.1.7, Section 5.1.8
		S-51217978	SE-51217979	Object	Section 5.1.7, Section 5.4.3, Section 5.5.4
		S-51225720	SE-51225721	Object	Section 5.3.2
		S-51225754	SE-51225755	Object	Section 5.1.7, Section 5.4.2, Section 5.5.4
		S-51227456	SE-51227457	Object	Section 5.1.1, Section 5.1.7, Section 5.1.12, Section 5.1.15
		S-51227708	SE-51227709	Object	Section 5.1.1
		S-51247459	SE-51247460	Object	Section 5.2.2, Section 5.3.4, Section 5.5.4
		S-51256207	SE-51256208	Object	Section 5.1.7, Section 5.3.4
		S-51257965	SE-51257966	Object	Section 5.1.14
		S-51258218	SE-51258219	Object	Section 5.1.5, Section 5.2.2, Section 5.3.4, Section 5.5.4
		S-51264206	SE-51264207	Object	Section 5.1.10, Section 5.1.12, Section 5.1.13
		S-51274459	SE-51274460	Support	Section 5.3.1
		S-51277730	SE-51277731	Object	Section 5.4.1
		S-51278956	SE-51278957	Object	Section 5.1.7, Section 5.3.3, Section 5.5.4
		S-51279456	SE-51279457	Object	Section 5.1.4, Section 5.1.7, Section 5.1.16, Section 5.5.1, Section 5.5.3
		S-51280456	SE-51280457	Object	Section 5.1.9
		S-51280496	SE-51280497	Object	Section 5.1.1
		S-51285736	SE-51285737	Object	Section 5.1.1, Section 5.1.5, Section 5.1.7, Section 5.1.15
		S-51285750	SE-51285751	Object	Section 5.1.2, Section 5.1.5, Section 5.1.7, Section 5.1.8, Section 5.1.13, Section 5.4.2
		S-51291706	SE-51291707	Object	Section 5.1.1, Section 5.1.5, Section 5.1.7, Section 5.1.15, Section 5.3.3, Section 5.5.2, Section 5.5.3
		S-51674456	SE-51674457	Object	Section 5.1.5, Section 5.1.7, Section 5.1.15
		S-51674956	SE-51674957	Object	Section 5.1.5, Section 5.1.7, Section 5.1.15, Section 5.4.2

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