Deeargee Solar and Battery Project

Scoping Report

Prepared for ACEN Australia Pty Ltd

May 2024

Deeargee Solar and Battery Project

Scoping Report

ACEN Australia Pty Ltd

E220672 RP1

May 2024

Version	Date	Prepared by	Reviewed by	Comments
V1	15 December 2023	Natalie Devillers	David Richards	Draft for ACEN Review
V2	22 April 2024	Natalie Devillers	David Richards	Final
V3	22 May 2024	Natalie Devillers	David Richards	Final

Approved by

David Richards
Associate Environmental Scientist
22 May 2024

Level 3 175 Scott Street
Newcastle NSW 2300

Executive summary

ACEN Australia Pty Ltd (ACEN) proposes to develop the Deeargee Solar and Battery Project, a large-scale solar photovoltaic (PV) generation facility and battery energy storage system (BESS), supported by associated infrastructure (the project). The project will be located about 12 km south-east of Uralla and lies within the Uralla local government area (LGA) in New South Wales (NSW). The project is within the New England Renewable Energy Zone (REZ) and will connect to transmission infrastructure proposed to be built by Energy Corporation of NSW as part of the REZ.

The project will have a generation capacity of up to approximately 320 MW (AC). The BESS will have a capacity of up to 1,400 MW (AC) two-hour energy storage, which may be configured as 700 MW four-hour energy storage.

The project investigation area is approximately 1,363 hectares (ha). Within the project investigation area, a development footprint of approximately 959 ha has been selected. The development footprint has been the subject of an iterative design process that has been informed by the outcomes of preliminary biodiversity fieldwork and constraints identification. The final layout and capacity of the project will be selected on the basis of environmental constraints identification, outcomes of stakeholder engagement, engineering assessments and design of project infrastructure.

The land within the project investigation area is privately owned and is divided into two distinct sections, one to the west of Hillview Road and one to the east. It is proposed that the eastern and western areas are connected via an overhead or underground line (subject to detail design considerations).

The project aligns with the NSW and Commonwealth Government's objectives for energy security and reliability and emissions reductions. The project will contribute to the Commonwealth Government's plan to reduce Australia's greenhouse gas emissions by 43% by 2030, and net zero emissions by 2050. Once operational, the project could abate approximately 660,000 tonnes of greenhouse gases annually and power up to 160,000 NSW households per year.

The project is a State significant development (SSD) pursuant to Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021. Accordingly, approval for the project is required under Part 4 of the NSW *Environmental Planning and Assessment Act 1979*.

This scoping report has been prepared to support a request for the Secretary's Environmental Assessment Requirements (SEARs) for the project. A preliminary environmental assessment has been carried out and is documented in this report to assist in the identification of matters that will require further assessment in the environmental impact statement (EIS), and the level of assessment that should be carried out for each matter.

This scoping report has been prepared in accordance with *State Significant Development Guidelines – Preparing a Scoping Report* (DPIE 2021a). The aspects identified as requiring detailed assessment in the EIS include biodiversity, visual and land. Aspects requiring standard assessment include social and economics, traffic, Aboriginal cultural heritage, historic heritage, water, noise and vibration, and hazards and risk.

TABLE OF CONTENTS

Appendices

Tables

Figures

Photographs

Plates

1 Introduction

1.1 Project overview

ACEN Australia Pty Ltd (ACEN) proposes to develop the Deeargee Solar and Battery Project, a large-scale grid connected solar and battery energy storage system (BESS) along with associated infrastructure approximately 12 kilometres (km) south-east of Uralla in the Uralla Shire local government area (LGA) of New South Wales (NSW) (the project) (Figure 1.1). The project, located on Hillview Road, Gostwyck, NSW 2358, is expected to have a generation capacity of up to 320 megawatts (MW) and will be constructed on land currently used for grazing and cropping. The BESS will have a capacity of up to 1,400 MW (AC) two-hour energy storage, which may be configured as 700 MW four-hour energy storage.

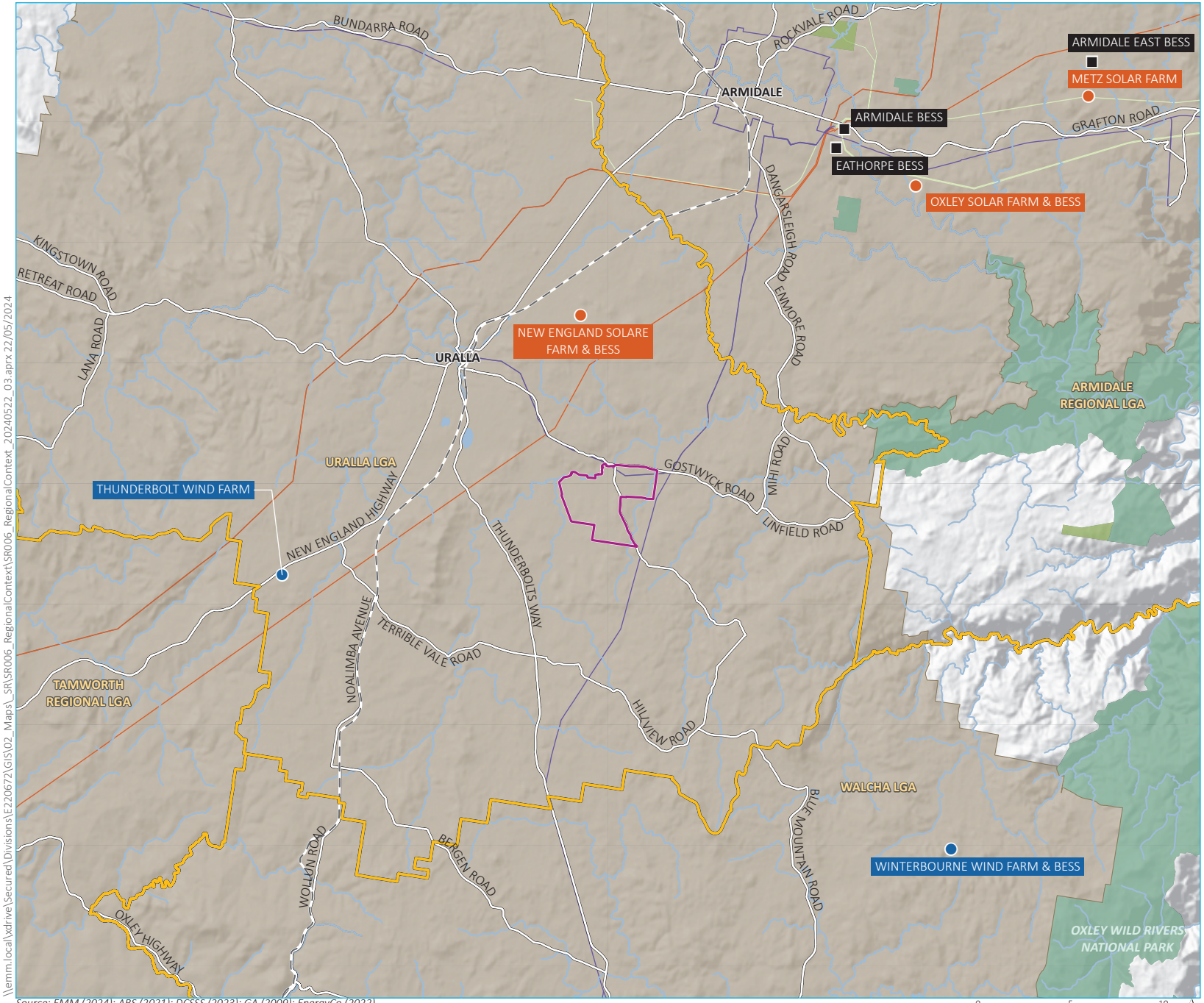
The project is within the New England Renewable Energy Zone (REZ), which has been formally declared by the NSW Minister for Energy under Section 19(1) of the NSW *Electricity Infrastructure Investment Act 2020*. The New England region of NSW has been selected by the NSW Government for the development of the New England REZ due to its significant natural energy resources and has an intended network capacity of 8 gigawatts (GW).

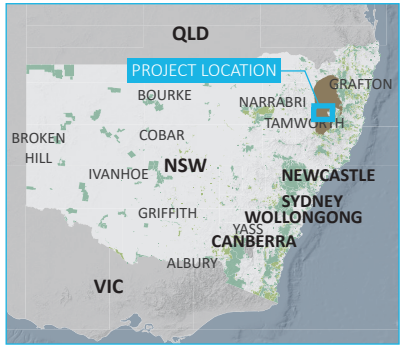
A project investigation area of approximately 1,363 hectares (ha) has been the focus of preliminary baseline investigations. Within the project investigation area, the development footprint (i.e. the area within which project infrastructure will be located) is 959 ha and will continue to be refined during the preparation of the environmental impact statement (EIS).

The project investigation area is south of New England Solar (SSD-9255) and is partly within the southern array area, which was nominated for the development of a solar farm and associated infrastructure as part of the *New England Solar Farm Environmental Impact Statement* (EMM 2019) before being withdrawn from the development application during the submissions phase. The project investigation area for Deeargee Solar and Battery Project has been informed by feedback from the local community during the public exhibition of the EIS for New England Solar, including a 4 km setback from Thunderbolts Way.

The exact land area to be covered by photovoltaic (PV) arrays and the MW generating capacity of the project is subject to change depending on the outcomes of environmental constraints identification, the final area leased by ACEN, project design, the New England REZ transmission line alignment and outcomes of stakeholder engagement.

The project will connect to the grid via new infrastructure proposed by Energy Corporation of NSW (EnergyCo) as part of the New England REZ (Figure 1.2).





KEY

- Project investigation area
- New England REZ

Renewable development

- BESS
- Solar
- Wind

Electricity transmission line

- 66 kV
- 132 kV
- 330 kV

Existing environment

- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009); EnergyCo (2022)

0 5 10 km

GDA2020 MGA Zone 56

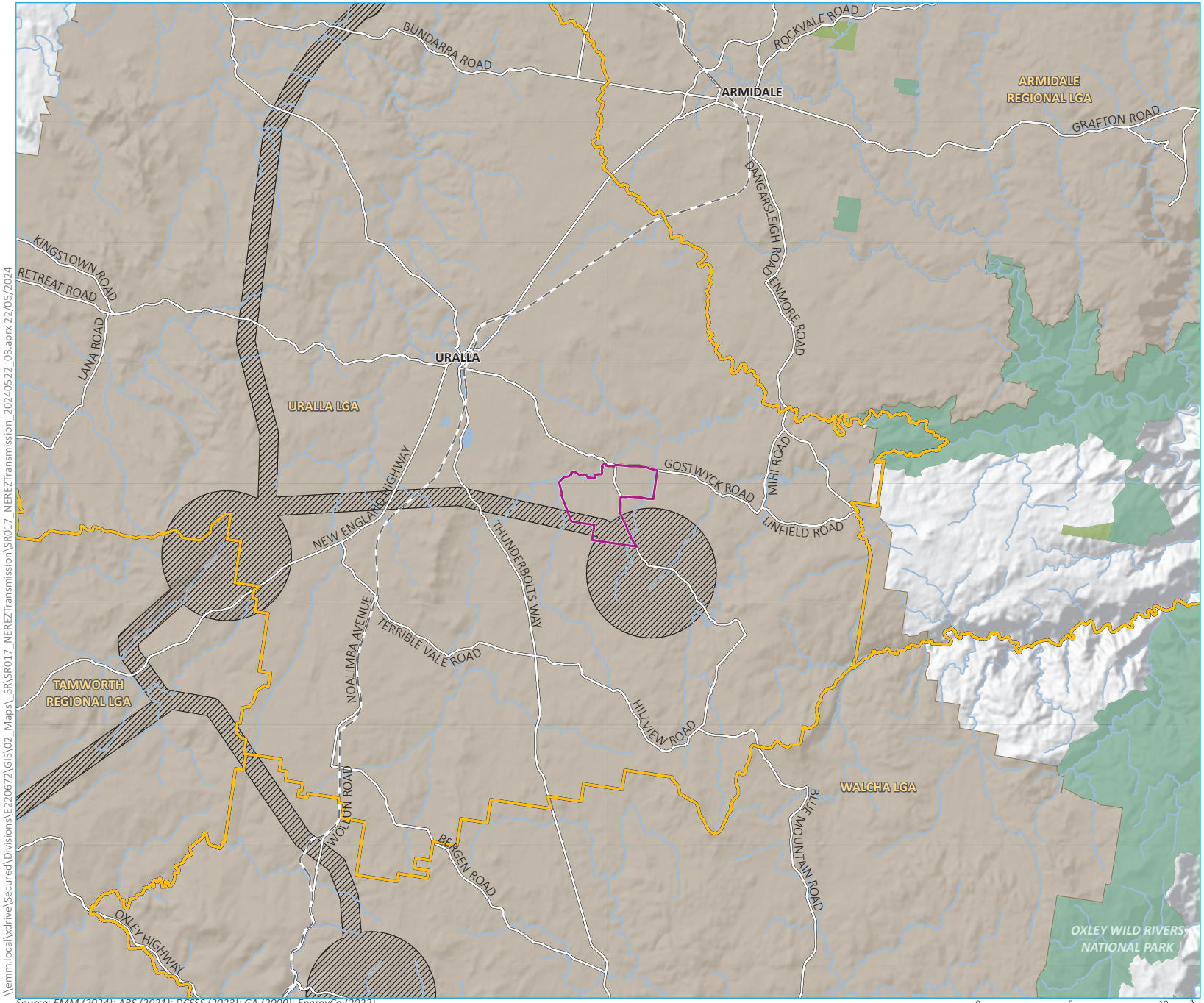
N

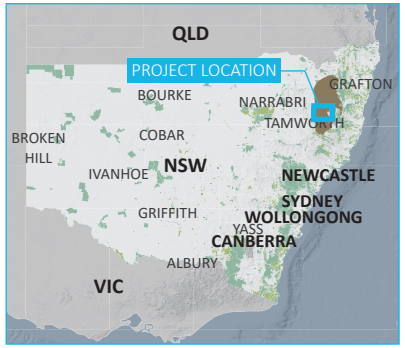
\\emm.local\xdrive\Secured\Divisions\E220672\GIS\02_Maps_SR\SR006_RegionalContext\SR006_RegionalContext_20240522_03.aprx 22/05/2024

Regional context

Deeargee Solar and Battery Project
Scoping Report
Figure 1.1

EMM
creating opportunities





KEY

- Project investigation area
- New England REZ
- Proposed New England REZ transmission line

Existing environment

- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009); EnergyCo (2022)

0 5 10 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\Secured\Divisions\E220672\GIS\02_Maps_SR\SR017_NEREZTransmission\SR017_NEREZTransmission_20240522_03.aprx 22/05/2024

Proximity to proposed New England REZ transmission line

Deeargee Solar and Battery Project
Scoping Report
Figure 1.2

EMM
creating opportunities

1.2 The applicant

The applicant for the project is ACEN, a wholly owned subsidiary of ACEN Corporation, the listed energy platform of the Ayala group. The company has approximately 4,000 MW of attributable capacity from facilities in the Philippines, Vietnam, Indonesia, India and Australia. Its renewable energy assets include solar, wind, battery and pumped hydro projects across Australia.

ACEN's first operational project in Australia is New England Solar, which has been in construction since 2021 and commenced operations in 2023. It is one of the largest solar projects in Australia participating in the National Energy Market (NEM) and the first solar project in Australia to be financed on a fully merchant basis. Stubbo Solar, in the Central West Orana REZ, is ACEN's second project, which commenced construction in late 2022. Other ACEN projects include Birriwa Solar (NSW), Valley of the Winds (NSW), Aquila Wind (NSW), Phoenix Pumped Hydro (NSW), Robbins Island and Jim's Plain Wind (TAS) and Northeast Wind (TAS).

ACEN's aim is to provide low cost, clean electricity in a socially and environmentally responsible way. ACEN is committed to transition the company's generation portfolio to 100% renewable energy by 2025 and to achieve net zero greenhouse gas (GHG) emissions by 2050.

Contact details for ACEN are provided in Table 1.1.

Table 1.1 Summary of applicant details

Company name	ACEN Australia Pty Ltd
ACN	616 856 672
Address	Suite 2, Level 2, 15 Castray Esplanade, Battery Point, 7004 Tasmania

1.3 Purpose of this report

The project is a State significant development (SSD) pursuant to Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) and approval for the project is required under Part 4, Division 4.7 of the NSW *Environmental Planning and Assessment Act* (EP&A Act). An SSD application for the project is to be accompanied by an EIS.

This scoping report supports a request to NSW Department of Planning, Housing and Infrastructure (DPHI) for the Secretary's Environmental Assessment Requirements (SEARs) in relation to the project. The SEARs will identify the matters to be assessed in the EIS and the level of assessment required.

This scoping report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of ACEN in accordance with the *State Significant Development Guidelines – Preparing a Scoping Report* (DPIE 2021a) (Scoping Report Guidelines). Other NSW Government SSD technical guidelines have been considered where applicable, as well as the *Large-scale Solar Energy Guideline for State Significant Development* (DPE 2022a).

This scoping report provides a high-level description of the project, including the project investigation area and its surroundings, the environmental planning pathway for approval and the identification of key potential environmental issues that may be associated with the project.

1.4 Project terminology

The following terms are used throughout this scoping report:

- Project investigation area: The project investigation area is the maximum area considered for the project based on the extent of land where ACEN holds a landholder agreement. The project investigation area is approximately 1,363 ha.

- Development footprint: The development footprint is wholly within the project investigation area and is the maximum extent of ground disturbing works associated with the construction and operation of the project and is approximately 959 ha. The development footprint has been refined to avoid and minimise impacts, where possible, based on the outcomes of preliminary biodiversity fieldwork and stakeholder engagement. Further refinements to the development footprint will be carried out to avoid and minimise impacts based on outcomes during the EIS phase.

- Access corridors: Three potential access options are currently being explored from the public road network to the development footprint, including the use of Salisbury Plains Road, Carlon Menzies Road, Hillview Road and/or Gostwyck Road. The decision on the preferred vehicle access route will depend on outcomes of environmental constraints identification and stakeholder engagement (including with EnergyCo).

- Project access points: The potential locations where construction and operational traffic will access the development footprint. Access across the development footprint will be possible via internal tracks.

- Project related residence: A dwelling whose owners have parts of their property included in a land agreement with ACEN for either this project or another project (i.e. host landholder dwellings). Nearby landholders that have neighbour agreements or impact agreements with ACEN are also project related residences.

- Non-project related residence: A dwelling whose owners do not have parts of their property included in an agreement with ACEN.

2 Strategic context

2.1 Site and surrounds

2.1.1 Regional context

Uralla is the largest township in the Uralla Shire LGA within the Northern Tablelands, with a population of 5,971 (ABS 2021). It is located at the intersection of New England Highway and Thunderbolts Way, approximately 23 km south-west of the city of Armidale, and is the Uralla Shire LGA's commercial and administrative centre. Major industries across Uralla, Tamworth and Armidale LGAs include beef-cattle farming, sheep farming, hospitals, teaching, administration and mining. Agriculture accounts for up to 50% of economic activity in some parts of Uralla Shire LGA, although Tamworth and Armidale LGAs have more diverse economies.

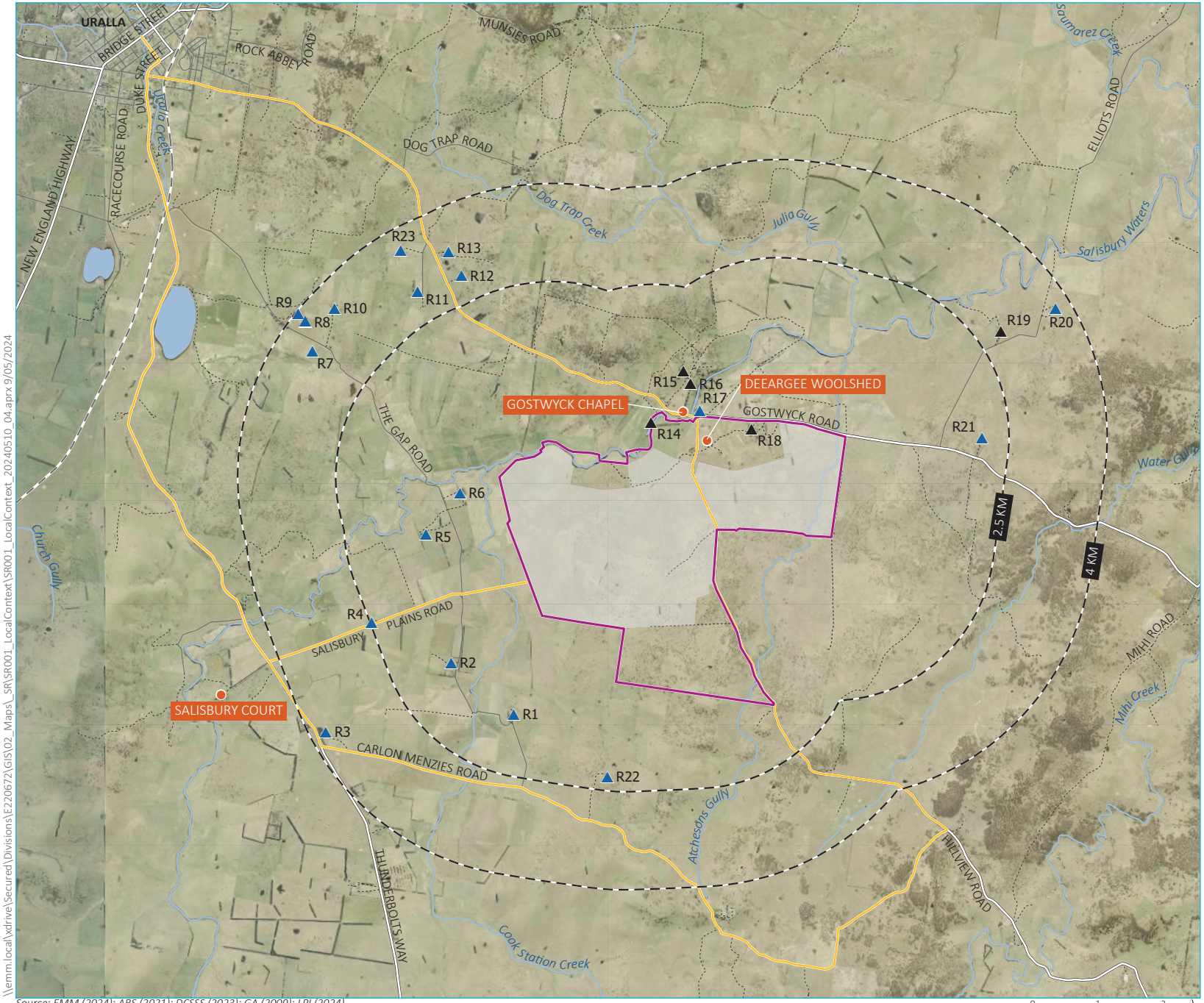
The project is within the New England REZ. A number of other renewable energy developments are proposed or in various stages of development in the vicinity of the project including New England Solar (in construction); Eathorpe Battery (proposed); Armidale Battery Energy Storage System (proposed), Rangoon Windfarm (proposed), Armidale East BESS (proposed), Oxley Solar Farm (approved); Bendemeer Solar Farm (proposed); Metz Solar Farm (in construction); Winterbourne Wind Farm (proposed) and Thunderbolt Wind Farm (proposed)

2.1.2 Local context

The land in the project investigation area is zoned RU1 Primary Production under the Uralla Local Environmental Plan 2012 (Uralla LEP) and is predominantly used for agricultural purposes. The majority of the project investigation area has been modified by historical land use practices and past disturbances associated with land clearing, cropping and intensive livestock grazing. Cattle and sheep grazing for wool, breeding stock, and meat are the dominant agricultural activities within the project investigation area, with small amounts of cropping also undertaken.

The landform pattern within and surrounding the project investigation area can be described as a mix of low rolling hills and flatter areas that are frequently dissected by drainage networks and their adjacent flood plains, terraces and foot slopes. Elevation across the project investigation area is variable, ranging from approximately 1,000 m Australian Height Datum (AHD) to 1,040 m AHD.

There are 18 non-project related sensitive receptors (i.e. residences) within 4 km of the project investigation area, including 1 which is within 500 m (Figure 2.1).



KEY

- Project investigation area
- Development footprint
- Distance buffer
- Access corridor (option)
- Heritage item (Uralla LEP listed)
- Non-project related sensitive receptor
- Project-related sensitive receptor

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009); LPI (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\Secured\Divisions\E220672\GIS\02_Maps_SR\SR001_LocalContext\SR001_LocalContext_20240510_04.aprx 9/05/2024

Local context

Deeargee Solar and Battery Project
Scoping Report
Figure 2.1

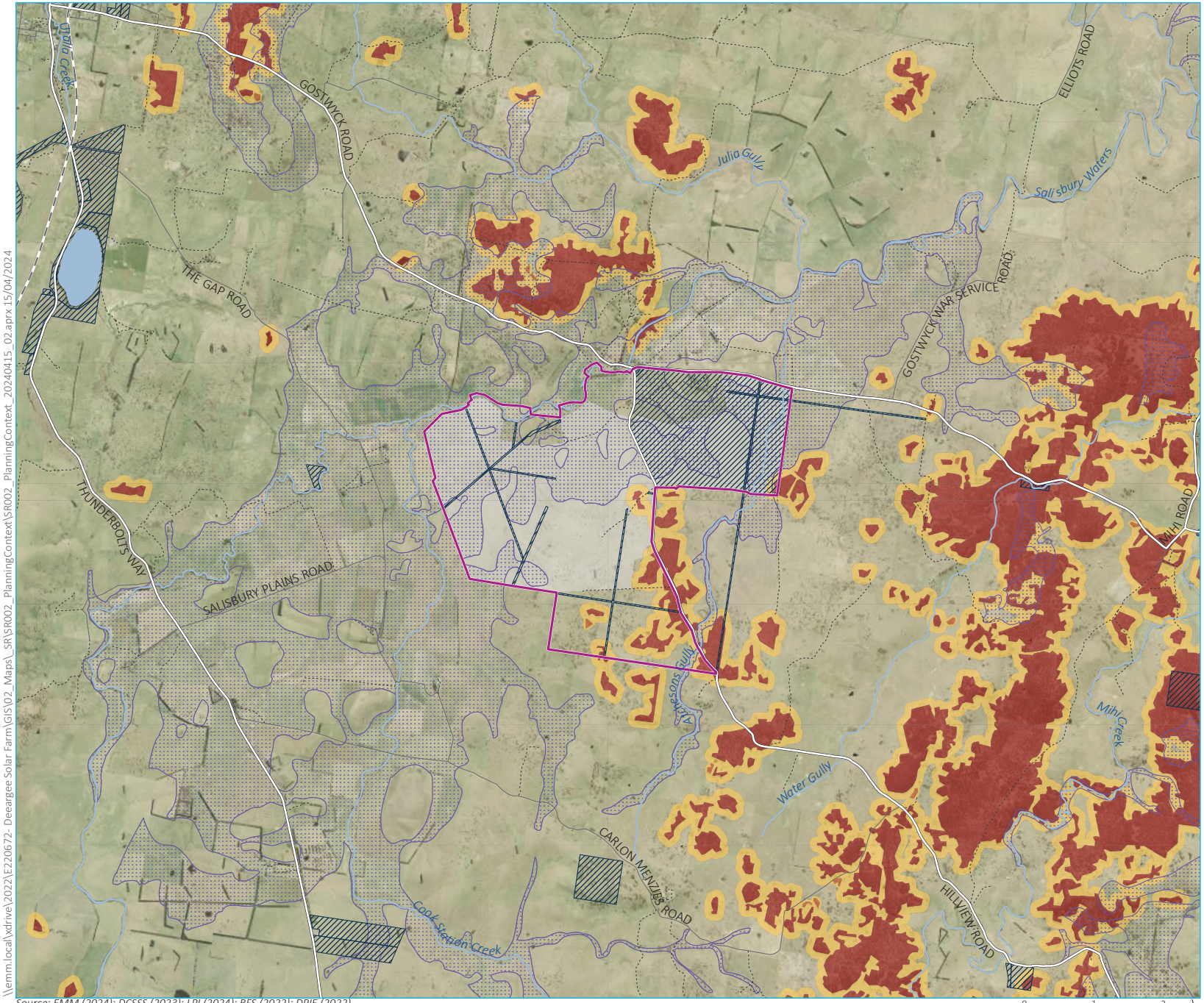
EMM
creating opportunities

2.1.3 Project investigation area

A summary of the key features of the project investigation area and surrounds is provided in Table 2.1.

Table 2.1 Key features of the investigation area and surrounds

Aspect	Description
LGA	The project investigation area is within the Uralla LGA.
Land zoning	The project investigation area is zoned RU1 Primary Production under the Uralla LEP.
Nearby townships	Uralla is approximately 12 km north-west of the project investigation area, Armidale is approximately 25 km north of the project investigation area and Tamworth is approximately 75 km south-west of the project investigation area.
Landscape	The landform pattern within and surrounding the project investigation area can be described as a mix of low rolling hills and flatter areas that are frequently dissected by drainage networks and their adjacent flood plains, terraces and foot slopes.
Land use	Land use within the project investigation area includes agricultural operations (predominantly sheep and cattle grazing with small amounts of cropping).
Site history	The project investigation area falls within the Aboriginal language group boundary of the Nganyaywana; also known as the Anaiwan. It is a region with a rich Aboriginal past. Historically, land was claimed by squatters who raised Merino sheep for both domestic and international markets and the region remains largely pastoral.
Land ownership	Land within the project investigation area is privately-owned by one landholder.
Residences	There are 18 non-project related residences within 4 km of the project investigation area, including 1 within 500 m of the project investigation area.
Mineral title	A portion of the project investigation area is within Exploration Licence (EL) 9415 (expires 31 May 2028), issued under the NSW *Mining Act 1992* to LM2 Metals Pty Ltd (ABN 650 292 676).
Nearby natural features	• Salisbury Waters flows through the northern portion of the project investigation area (Figure 2.1). • Atchesons Gully flows through the eastern portion of the project investigation area (Figure 2.1). • Cook Station Creek is adjacent to the western portion of the project investigation area (Figure 2.1).
Nearby infrastructure	Local roads in the vicinity of the project investigation area include Gostwyck Road, Hillview Road, The Gap Road, Salisbury Plains Road and Carlon Menzies Road. The project investigation area is approximately 145 m south of Gostwyck Chapel and 5 km east of Salisbury Court (Figure 2.1), both of which are listed heritage items on Uralla LEP. The Deeargee Woolshed (Uralla LEP listed heritage item) is located within the project investigation area (Figure 2.1).
Surrounding development	The project investigation area is within the New England REZ. Other renewable energy and transmission developments within proximity of the project include: • New England Solar and Battery Project • Eathorpe BESS • Oxley Solar Farm • Bendemeer Solar Farm • Metz Solar Farm • Winterbourne Wind Farm • Thunderbolt Wind Farm. Where relevant, cumulative impacts from the project and surrounding developments will be assessed in accordance with the *Cumulative Impact Assessment Guidelines for Significant Projects* (DPIE 2021b).
Planning context	As shown on Figure 2.2, part of the project investigation area is mapped as: • biophysical strategic agricultural land (BSAL) • bushfire prone land • Crown land. The project investigation area is not mapped as flood prone land and there are no travelling stock reserves.



KEY

- Project investigation area
- Development footprint
- Biophysical strategic agricultural land
- Crown land

Bushfire prone land

- Vegetation Buffer
- Vegetation Category 1
- Vegetation Category 2

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); LPI (2024); RFS (2022); DPIE (2022)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR002_PlanningContext\SR002_PlanningContext_20240415_02.aprx 15/04/2024

Planning context

Deeargee Solar and Battery Project
Scoping Report
Figure 2.2

EMM
creating opportunities

2.2 Strategic planning framework

An overview of relevant key policies, plans and strategies, and how the project aligns with these, is provided in Table 2.2.

Table 2.2 Alignment with key strategic planning frameworks

Plan, policy or strategy	Description	Alignment with strategic framework
International context		
The Paris Agreement	*The Paris Agreement* is a legally binding international treaty on climate change adopted by 196 parties in 2015. As a signatory to the agreement, the Australian Government has committed to reduce GHG emissions by 26–28% on 2005 levels by 2030.	The project will contribute to meeting Australia's commitments under the Paris Agreement by reducing the NEM's annual GHG emissions. Once operational, the project could abate approximately 660,000 tonnes of GHG annually and power up to 160,000 NSW households per year.
National context		
Large-scale Renewable Energy Target	The Australian Government Clean Energy Regulator administers the Large-scale Renewable Energy Target which incentivises investment in renewable energy power stations such as wind and solar farms. The Large-scale Renewable Energy Target of 33,000 GW hours of additional renewable electricity generation was met at the end of January 2021 (Clean Energy Regulator 2021). The annual target will remain at 33,000 GW hours until the scheme ends in 2030.	It is noted that the annual target has been met and will remain at 33,000 GW hours until the scheme ends in 2030.
Integrated System Plan 2022 (ISP)	The ISP prepared by the Australia Energy Market Operator (AEMO) is an: "Actionable roadmap for eastern Australia's power system to optimise consumer benefits through a transition period of great complexity and uncertainty." REZs are identified in the ISP as "high-quality resource areas where clusters of large-scale renewable energy projects can be developed using economies of scale" (AEMO 2022). The ISP identifies that significant investment in the NEM is necessary, requiring a nine-fold increase in utility-scale variable renewable energy and that: "much of this resource will be built in REZs that coordinate network and renewable investment, and foster a more holistic approach to regional employment, economic opportunity and community participation". The ISP identifies network projects within the New England REZ, including: • New England REZ Transmission Link, which is listed as an actionable project (i.e. work should commence at earliest possible time) • New England REZ Extension, which is listed as a future ISP project.	The project will contribute to the development of the New England REZ, and the NEM more broadly, by providing reliable, secure and affordable electricity to consumers. The project is strategically located within proximity of the proposed alignment of New England REZ transmission infrastructure, so minimal transmission infrastructure between the project investigation area and New England REZ transmission infrastructure is anticipated to be required for grid connection.

Table 2.2 Alignment with key strategic planning frameworks

Plan, policy or strategy	Description	Alignment with strategic framework
Net Zero 2050	In October 2021, the Australian government released its *Long-Term Emissions Reduction Plan* to achieve net zero emissions by 2050 (DCCEEW 2021). The Plan aims at reaching a net zero economy through a technology-based approach, whilst protecting relevant industries, regions and jobs. It is part of an overarching strategy for emission reduction, based on a technology-led approach which includes a Technology Investment Roadmap and its Low Emissions Technology Statements.	The project will reduce GHG emissions associated with energy generation over its operational life. The project will contribute to the Commonwealth Government's plan to reduce Australia's GHG emissions by 43% by 2030, and net zero emissions by 2050, with 82% of Australia's energy to be derived from renewables by 2030. Once operational, the project could abate approximately 660,000 tonnes of GHG annually and power up to 160,000 NSW households per year. The incorporation of a BESS into the project will enable the storage of renewable energy to increase market efficiency and enable greater penetration of renewables in the electricity grid.
State context		
NSW Electricity Strategy 2019 (DPIE 2019)	The *NSW Electricity Strategy* (DPIE 2019) is the NSW Government's plan for a reliable, affordable and sustainable electricity future that supports a growing economy and sets out an approach to respond to emerging energy security challenges. The Strategy recognises that where variable generators are unable to satisfy demand, other technologies that can provide electricity on demand (such as storage) are required. Principle 1 of the NSW Electricity Strategy acknowledges that renewable energy generation is the cheapest form of reliable electricity generation and calls upon investment into these technologies to reduce electricity prices and ensure network reliability.	With intended network capacity of up to 320 MW, the project will contribute to the development of the declared New England REZ. The REZ will in turn meet the aims of the Electricity Strategy by contributing energy to support a secure, reliable energy system. This region has been formally identified as an ideal location to play a key role in renewable energy generation due to an abundance of high-quality wind and solar resources, proximity to existing and planned high voltage transmission, land-use compatibility and a strong pipeline of proposed projects.
NSW Network Infrastructure Strategy (EnergyCo 2023)	The *NSW Network Infrastructure Strategy* (EnergyCo 2023) outlines the strategy for the practical coordination of NSW network infrastructure connecting new generation, firming and storage across the REZs in NSW.	The project is consistent with, and leverages, the 'Deliver Now' objectives for the New England REZ within the *NSW Network Infrastructure Strategy*, as it contributes to meeting the target of 6 GW of network capacity to the New England REZ.
Net Zero Plan Stage 1: 2020–2030 (DPIE 2020b)	The *Net Zero Plan Stage 1 2020–2030* (DPIE 2020b) outlines the NSW Government's plan to grow the economy and create jobs while helping the state to deliver a 35% cut in emissions compared to 2005 levels.	The project contributes to Priority 1 of the Net Zero Plan: "Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living." The project is within the New England REZ. The region will play a key role in a renewable energy future for NSW due to its good renewable energy resources and opportunity to utilise electricity network infrastructure. The project will utilise these benefits to contribute to the NSW Net Zero Plan.

Table 2.2 Alignment with key strategic planning frameworks

Plan, policy or strategy	Description	Alignment with strategic framework
NSW Electricity Infrastructure Investment Roadmap (DPIE 2020c)	The Electricity Infrastructure Roadmap coordinates investment in transmission, generation, storage and firming infrastructure as ageing coal-fired generation plants retire. The roadmap includes actions that will deliver "whole-of system" benefits. The roadmap sets out a plan to deliver the state's first five REZs in the Central-West Orana, New England, South-West, Hunter-Central Coast, and Illawarra regions.	The project is within the New England REZ and is ideally placed to contribute to the success of the roadmap. Once operational, the project could power the equivalent of up to 160,000 NSW households.
NSW Energy Security Target and Safeguard (DPIE 2020d)	The objective of the *NSW Energy Security Target and Safeguard* (DPIE 2020d) is to give the market certainty on the amount of new electricity generation and distribution capacity that is needed to deliver a reliable energy system over the medium to long term, in response to the retirement of several large coal-fired generators. The NSW Energy Security Target and Safeguard is established under the NSW *Electricity Infrastructure Investment Act 2020* and is equivalent to the maximum demand experienced in NSW every 10 years, plus a reserve margin. AEMO has been appointed as the Energy Security Target Monitor and its first report released in December 2021 (AEMO 2021) predicts a target breach over the 2029–30 period (i.e. that there will be insufficient infrastructure to meet the Energy Security Target). This signals the urgent need for new generation and transmission infrastructure to ensure energy security for NSW consumers.	The project will contribute additional energy generation to the NEM and will assist in ensuring energy security for NSW consumers.
Large-Scale Solar Energy Guideline (DPE 2022a)	The *Large-Scale Solar Energy Guideline* (DPE 2022a) provides the community, industry, applicants and regulators with guidance on the planning framework for the assessment of large-scale solar projects and identifies the key planning considerations relevant to solar energy development in NSW.	Site selection and impact assessment considerations detailed in the guideline have been and will continue to be used to inform the project and will be considered in the EIS.
Local and regional context		
New England North West Regional Plan 2036 (DPE 2017)	The Intent of the *New England North West Regional Plan 2036* (DPE 2017) is to guide the NSW Government's land use planning priorities and decisions in the New England North West region to 2036. One of the primary goals of the *New England North West Regional Plan 2036* is to diversify the region's economy. To achieve this goal, the plan identifies nine directions, one of which is to grow New England North West as the renewable energy hub of NSW. The plan also establishes priorities for local councils within the New England North West Region to help achieve its overarching goals. One of the priorities identified for Uralla Shire Council is to investigate the potential for wind and solar production and encourage renewable energy opportunities.	The project will contribute to the diversification of the energy sector while strengthening the region's economy. This will prolong the project's direct and indirect economic benefits within local and regional economies.

Table 2.2 Alignment with key strategic planning frameworks

Plan, policy or strategy	Description	Alignment with strategic framework
Uralla Shire Local Strategic Planning Statement 2021	The *Uralla Shire Local Strategic Planning Statement* (Uralla Shire Council 2021) plans for the community's economic, social and environmental land use needs to 2040. As identified within the statement, the Uralla Shire LGA is the prime location for the future generation of renewable energy and has been identified as one of the key renewable energy precincts in NSW under the *New England North West Regional Plan 2036*. The continued growth of the renewable energy sector over the next 20 years presents opportunities for Uralla Shire LGA; however, this development needs to be managed to minimise adverse impacts on the local environment and agricultural productivity.	The project will contribute to Planning Priority 5.1 of the *Uralla Shire Local Strategic Planning Statement* (i.e. to support and manage rural landscapes) and will support the growth of the renewable energy sector within the Uralla Shire LGA. Where possible, project infrastructure will be sited to minimise impacts on biodiversity and neighbouring residents (including consideration of traffic, construction and operational noise and visual amenity impacts).

2.3 Project justification

2.3.1 Project benefits

The project would have the ability to generate up to 320 MW (AC) of renewable energy, playing an important role in the transition to a clean and efficient national electricity system. The project construction and operation will also contribute to the long-term economic prosperity of the host region.

The proposed project location is within the New England REZ and would form an important part of Australia's response to climate change and Commonwealth and NSW Government commitments in the reduction of GHG emissions from the electricity industry. The project aligns with government objectives for energy security and reliability and will contribute to the continued growth of renewable energy generation and storage capacity.

The project will:

- contribute to and support the development of the New England REZ by providing renewable energy generation and storage capacity and improving the security, stability and resilience of the NEM
- facilitate the shift away from coal-fired power generation, supporting Australia's transition towards clean and renewable sources of energy (with a capacity of up to 320 MW and potential to power approximately 160,000 NSW households per year)
- avoid, minimise and mitigate adverse impacts on the environment and community during construction and operation (to the extent practicable)
- establish a strong network of positive and long-term relationships within the local community and contribute to economic and social growth within the Uralla LGA and surrounds
- provide energy storage for sustainable renewable energy to enable continuous and reliable electricity output as part of a rapidly expanding industry in NSW.

The project will provide economic opportunities, including:

- ongoing economic benefits for both the local economy within the Uralla LGA, and the regional economy within the New England region more broadly, including:
    - demand for local and regional materials, equipment and services
    - industry capability development
    - a local community benefit sharing initiative in partnership with Uralla Shire Council
    - EnergyCo coordinated regional scale initiatives funded by the project's New England REZ Access fee
- employment opportunities during construction and operations.

2.3.2 Site suitability

The project investigation area is ideally located for the development of a solar farm and BESS due to the following:

- The project investigation area is within the New England REZ, an area nominated by the NSW government for significant investment in renewable energy generation, storage and transmission projects.
- The project investigation area is within the immediate vicinity of transmission infrastructure proposed as part of New England REZ (reducing the length of transmission lines and easements required to connect the project to the grid).
- The land surrounding the project investigation area is sparsely populated.
- The project investigation area has a very good solar resource (with monitoring undertaken on-site since 2018).
- The existing agricultural land use within and surrounding the project investigation area is compatible with large-scale solar energy generation and storage and there are identified opportunities to co-locate the project with agribusiness (namely sheep grazing).
- The construction and operation of a solar farm and BESS is not anticipated to result in significant adverse biophysical, cultural, social or economic impacts.

The development footprint has been the subject of an iterative design process that has been informed by the outcomes of preliminary biodiversity fieldwork and constraints identification. Further discussion of the refinement process is provided in Section 3.5.2.

3 Project description

The project comprises a large-scale solar PV generation facility and supporting infrastructure. The project will have a generation capacity of up to 320 MW. The BESS will have a capacity of up to approximately 1,400 MW(AC) two-hour energy storage or 700 MW(AC) four-hour energy storage. The project investigation area, physical layout and design, activities, project timing and alternatives are detailed in the following sections.

3.1 Project areas

The majority of the land within the project investigation area is privately owned, and can be considered as two distinct areas, one to the west of Hillview Road and one to the east. The eastern and western areas will be connected via an overhead or underground line. The project areas are summarised in Table 3.1.

Table 3.1 Project areas

Area name	Definition	Approximate area (ha)
Project investigation area	The project investigation area is the maximum area considered for the project based on the extent of land where ACEN holds landholder agreements. The project investigation area encompasses 11 land parcels (provided in Appendix A). The project investigation area includes part of Hillview Road (including the road easement) where electrical cabling may be required.	1,363
Development footprint	The development footprint is wholly within the project investigation area and is the maximum extent of ground disturbing works associated with the construction and operation of the project. The development footprint will continue to be refined to avoid and minimise impacts, where possible, based on the outcomes of the technical assessments and stakeholder engagement. Approval will be sought to disturb anywhere within the development footprint.	959
Access corridors	Three potential access options are currently being explored from the public road network to the development footprint including the use of Salisbury Plains Road, Carlon Menzies Road, Hillview Road and/or Gostwyck Road. The decision on the preferred vehicle access route will depend on outcomes of environmental constraints identification and stakeholder engagement (including with EnergyCo).	104[1]

Notes: 1. Total area associated with all three access options and includes formed roads and additional disturbance areas that may be required to facilitate road upgrades.

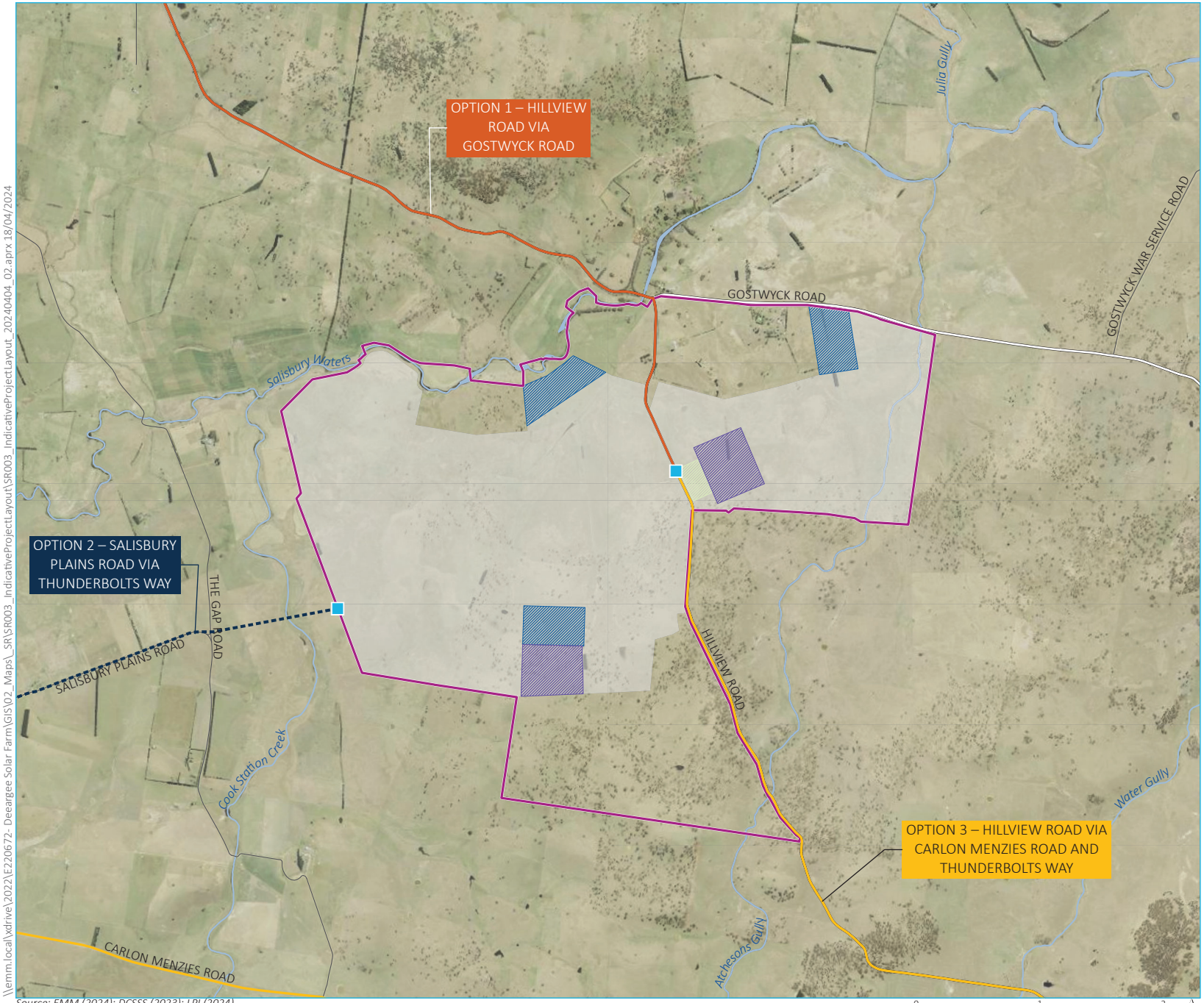
3.2 Physical layout and design

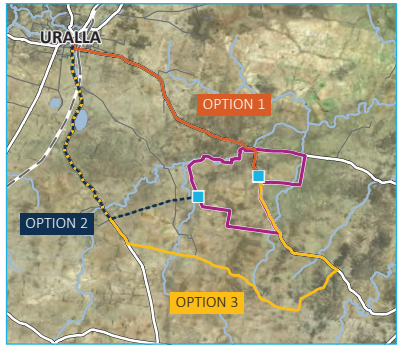
The project involves the development, construction, commissioning and operation of a solar PV electricity generation facility and BESS, which consists of PV modules, batteries, inverters, transformers and associated infrastructure. It is anticipated that the physical layout and design of the project will comprise the following key infrastructure elements:

- Solar farm – to absorb and convert sunlight into electricity. The solar farm will comprise around 750,000 PV modules as well as mounting structures, inverter stations, internal access tracks and associated cabling.
- Battery energy storage system (BESS) – to store and discharge electricity as required with a storage capacity of up to approximately 1,400 MW(AC) two-hour energy storage or 700 MW(AC) four-hour energy storage.

- Substation (including an electrical collection system, transformers, gantries, control rooms and associated infrastructure) – an on-site substation that will be connected to the solar farm and BESS.
- Switchyard (including an electrical collection system, gantries, control rooms, grid connection and associated infrastructure) – the switchyard will be the grid/New England REZ side of the project's connection point. Limited details on the proposed New England REZ infrastructure were available at the time of writing; however, it is anticipated that an 'energy hub' will be constructed south-east of Uralla within close proximity of the project investigation area. The project will connect into the New England REZ infrastructure via a transmission line. If a switchyard is required, this will likely require subdivision.
- Operations and maintenance (O&M) infrastructure, including O&M buildings namely meeting facilities, a temperature-controlled spare parts storage facility, supervisory control and data acquisition (SCADA) facilities, a workshop and associated infrastructure and car parking facilities.
- Site access – including access to the eastern and western sections of the solar farm from Hillview Road and/or Salisbury Plains Road.
- A new internal road network to enable access from surrounding local roads to the two array areas during construction and operations.
- Temporary construction infrastructure – to facilitate construction and likely to include laydown and storage areas and site offices.

An indicative project layout is provided on Figure 3.1. The final layout and capacity of the project will be selected on the basis of environmental constraints identification, outcomes of stakeholder engagement, engineering assessments and design of infrastructure.





KEY

- Project investigation area
- Development footprint
- Temporary accomodation facility (option)
- BESS (option)
- Substation (option)
- Access point (option)

Access corridor

- Option 1
- Option 2
- Option 3

Existing environment

- Major road
- Minor road
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); LPI (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR003_IndicativeProjectLayout\SR003_IndicativeProjectLayout_20240404_02.aprx 18/04/2024

Indicative project layout

Deeargee Solar and Battery Project
Scoping Report
Figure 3.1

EMM
creating opportunities

3.2.1 Solar arrays, PV modules, medium voltage cable network and power conversion units

The project will involve the development of two separate arrays of PV modules and power conversion units (PCUs). The number of PV modules required will be dependent on the final detailed design of the project; however, based on a 320 MW (AC) facility, it is anticipated that there will be approximately 750,000 PV modules.

PV modules will be installed in a series of rows to maximise the energy yield that is achievable given the solar resource and the ground area available within the array areas. The modules will be fixed to, and supported by, a ground-mounted framing structure, aligned in rows. It is highly likely that single axis tracking technology will be used for the project, based on the technology choices currently available in the market and the recent reductions in the costs associated with this technology. Assuming single axis tracking technology is implemented, the rows of PV modules will be aligned in a north-south direction and spaced out approximately 5–8 m apart. The use of single axis tracking technology would enable the PV modules to rotate from east to west during the day tracking the sun's movement. An example of rows of PV modules utilising single axis tracking technology is provided in Photograph 3.1.

Photograph 3.1 PV module rows with single axis tracking technology

An alternative configuration for the solar PV infrastructure may be considered for the project, although considered far less likely, namely a fixed tilt system, with the rows aligned east west and the PV modules facing north. However, it is noted that single axis tracking is considered more likely due to the recent fall in technology costs and the superior energy yield associated with this technology. As part of detailed design, ACEN may consider installing a section of the solar arrays using fixed tilt technology in consideration of the interaction between the solar PV generating capacity of the project, the sizing of the BESS and daytime electricity pricing.

The PV modules will be supported on mounting frames consisting of vertical posts (piles) and horizontal rails (tracking tubes). Rows of piles will be driven or screwed into the ground, depending on the geotechnical conditions, and the supporting racking framework will be mounted on top. Pre-drilling and/or cementing of foundations will be avoided if allowed by the geotechnical conditions.

The height of the PV modules at their maximum tilt angle (typically up to 60 degrees) will be up to 4 m. Additional site-specific clearance of up to around 300 mm may be required to avoid flooding risk or to improve access for sheep to graze underneath the PV modules. If installed at this height, the leading edge of each PV module may be up to 1.2 m from the ground. This would enable sheep to graze fully unimpeded underneath the PV module rows and is common practice as part of the latest bifacial PV module technology (which benefits from a higher ground clearance).

It should be noted that this is a highly conservative assumption, which is based on the PV module configuration illustrated in Option A of Plate 3.1. This configuration involves either four PV modules in landscape orientation or two modules in portrait orientation. The more typical configuration using single axis tracking technology is currently a single PV module mounted on the tracker tube in portrait (refer to Photograph 3.1 and Option B of Plate 3.1). Should this configuration be selected, the height of the PV modules at their maximum tilt angle would likely be closer to 2–3 m, which includes consideration of additional clearance to allow for sheep grazing.

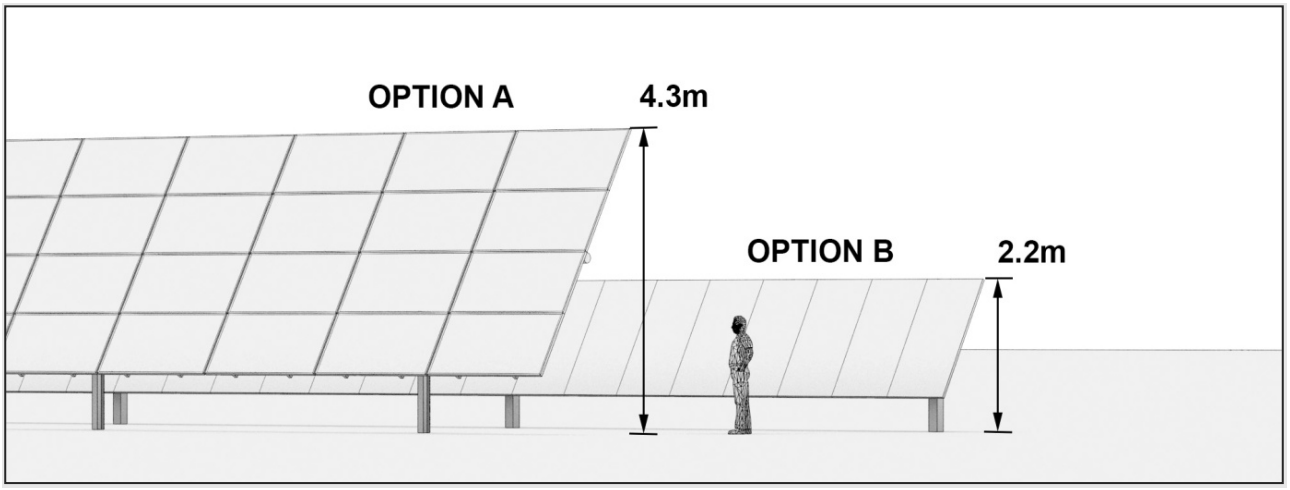


Plate 3.1 Example of PV module configurations under consideration for the project

DC cables will connect the PV modules to the PCUs.

The PCUs consist of three key components, namely inverter(s), transformer(s) and a ring main unit. The purpose of each PCU is to convert the direct current (DC) electricity generated by the PV modules into alternating current (AC) form, compatible with the electricity network. PCUs also increase the voltage of the electricity to 11–33 kV. The exact dimensions of the PCUs will be determined during detailed design; however, it is anticipated that each PCU will be approximately 8 m in length by 2.6 m wide by 2.7 m high. Photograph 3.2 has been provided as an example of what the PCUs and inverters may look like within the development footprint for the array areas. The exact model used will be determined as part of detailed design.

Photograph 3.2 Containerised inverter solution

A medium voltage (MV) cable reticulation network will be required to transport the electricity around each of the arrays. If underground, cables of either 11 kV, 22 kV or 33 kV will be installed at a depth of at least 600 mm and will be designed and fitted in accordance with relevant Australian industry standards. Electricity from the MV cable network will be stepped up to high voltage (HV) at the grid connection substation.

3.2.2 Collector network and on-site substation

As part of the ongoing detailed design of the infrastructure layout within the development footprint, it may be necessary to utilise either underground or overhead cabling (or a combination of the two) to connect the two array areas. Indicative alignments for electrical cabling corridors that may extend between the array areas are presented in Figure 3.1. The exact route of the electrical cabling within the two solar array areas has not yet been determined, so this is not shown in the figure. This will be determined during the detailed design stage of the project.

If overhead transmission lines are utilised, the design, height and style of the structures required to support them will be determined during the detailed design stage of the project; however, it is unlikely that the height of the structures will exceed 45 m consistent with Australian standards. Based on preliminary designs, single concrete, wood, or steel poles are anticipated rather than steel lattice towers. The easement required for the overhead transmission lines would be dependent on the type of structure selected but is likely to be approximately 45 m in width. The distance between each structure would also be dependent on the type of structure selected. Where possible, structures would avoid identified constraints. Complete clearance of vegetation within the proposed easements may be required.

An indicative location for the on-site substation is provided in Figure 3.1; however, the position of this infrastructure within the development footprint will ultimately be determined based on the location of the New England REZ transmission line proposed by EnergyCo. At the on-site substation, the electricity generated by the two solar arrays will be stepped up to 330 kV and injected into the electricity grid via the New England REZ transmission line and associated infrastructure.

The on-site substation will be within the indicative area of 5 ha that is shown on Figure 3.1.The exact dimensions of the on-site substation will be refined during the detailed design stage of the project. Consultation with EnergyCo is ongoing to understand the connection configuration which will confirm whether a switchyard will be required or not. The land on which the on-site switchyard is constructed is likely to require subdivision.

All land surrounding the development footprint is zoned RU1 Primary Production under the Uralla LEP, with associated minimum lot sizes of 200 ha. The subdivision of the lot(s) that are selected for the switchyard may result in a lot size that is less than the minimum lot size under the Uralla LEP. Notwithstanding, in accordance with the provisions of Section 4.38 of the EP&A Act, the proposed subdivision will be permissible subject to the approval of the Minister for Planning or their delegate. The proposed subdivision will be the subject of ongoing discussion with Uralla Shire Council, DPHI and the project landholders.

3.2.1 Battery Energy Storage System

The purpose of the BESS will be to support the network through the provision of ancillary services, introduce a dispatchable capability to the project's energy generation profile and allow for revenue diversification.

The BESS will be housed within either a number of small enclosures/cabinets or larger battery buildings. The specific design details for the BESS and their respective enclosure types have not been confirmed.

The small enclosures will likely be either modified shipping containers, pre-fabricated switch room structures or smaller outdoor rated cabinets. The modified shipping containers and prefabricated switch rooms will likely be mounted on concrete footings, while the cabinets will be mounted on several concrete slabs. The large buildings will be similar in appearance and construction to agricultural sheds prevalent across the project boundary.

Based on an indicative design, it is anticipated that the height of the battery enclosures/cabinets will be approximately 7.6 m, whilst the height of the dedicated use buildings will be approximately 7.5 m. These dimensions should be considered indicative only. Exact dimensions will be refined during the detailed design stage of the project.

Two indicative locations for the BESS are provided in Figure 3.1; however, the position of this infrastructure within the development footprint will ultimately be determined based on the location of the New England REZ transmission line and energy hub proposed by EnergyCo. The footprints presented on Figure 3.1 provide adequate flexibility for design and siting of the applicable BESS.

The major components for the BESS include the following:

- Batteries – the specific battery module manufacturer and model has not been selected.
- Inverters – the inverters will likely be similar to those used within the array areas as part of the PCUs. An alternative arrangement may be required whereby the inverters would be positioned adjacent to the battery cabinets, with the transformers and switchgear separate to this.
- Transformers – within the BESS, there will be two types of transformers, namely a LV to MV transformer and a MV to HV transformer. The configuration of the transformers will be subject to the type of batteries used and the BESS configuration.
- Heating ventilation air conditioning (HVACs) – one of three types of HVAC will likely be used as part of the BESS to maintain the batteries at a temperature that will optimise their lifetime and performance. This includes small package units; large chillers or a liquid cooling system (should the battery cabinet configuration be installed).
- Fire protection – the shipping container/pre-fabricated switch room structures and large building BESS configurations will have active gas-based fire protection systems. Within each of the potential enclosures, there will be thermal sensors and smoke/gas detectors connected to a fire control panel. Note that the Tesla cabinet facilities would not have this feature as the inherent design minimises risk of a fire spreading from one cabinet to another.

The components described above will be similar for each of the BESS structures likely to be constructed as part of the project. As noted above, the specific design details for the BESS have not been confirmed and will not be known until the completion of the detailed design stage of the project.

3.2.2 Supporting infrastructure

Supporting infrastructure will be required during construction and operations and will include:

- temporary construction facilities, including:
  - construction compound(s)
  - site office buildings
  - laydown areas
  - construction materials storage
- a site office and O&M buildings (including offices, amenities and equipment storage sheds) with parking during operations

- other associated permanent infrastructure, including:
  - hardstands
  - new access tracks
  - upgrades to existing access tracks
  - access points from the public road network.

Indicative locations for temporary construction compounds and the O&M facility will be identified in the EIS.

Security fencing will also be installed around the perimeter of the solar farm and high voltage electrical equipment such as the BESS and on-site substation. Signage will be clearly displayed around the substation identifying the hazards present.

Lighting, security cameras and weather stations will be installed where necessary for safety, maintenance, and security purposes. Lightning protection is also likely to be provided in key locations.

Landscaping may also be implemented within the development footprint to reduce the visibility of project infrastructure.

3.2.3 Temporary worker accommodation facility

A temporary worker accommodation facility for non-local construction employees (where skills cannot be sourced locally) may be established to accommodate up to 400 workers. To build the temporary worker accommodation facility, topsoil will be stripped where necessary, hardstand, walkways and carparks constructed. Where possible, local businesses will be engaged to supply goods and services to the facility, typically consisting of laundry, cleaning and catering. The facility is expected to be dismantled and its footprint rehabilitated once the project is constructed.

Three potential locations for the temporary worker accommodation facility are provided on Figure 3.1; however, only one facility is intended to be constructed as part of the project. The three options were selected based on the following criteria:

- access from the local road network
- proximity to key construction activities
- minimising impacts to biodiversity by avoiding woodland areas and utilising predominantly Category 1 exempt land and derived native grasslands
- offset from Uralla LEP listed heritage items (including Gostwyck Chapel and Deeargee Woolshed)
- offset from mapped watercourses (including Salisbury Waters and Atchesons Gully)
- proximity to sensitive receptors (with consideration of matters such as compliance with noise criteria, traffic, transport and accessibility impacts, dust and light spill).

3.2.4 Site access

Site access will be via either Hillview Road or Salisbury Plains Road. The transport route to the development footprint will be confirmed through the EIS but is expected to comprise vehicle movements from the New England Highway, which will access the project via:

- Option 1: Salisbury Street, Duke Street, East Street and Gostwyck Road before turning onto Hillview Road
- Option 2: Salisbury Street, Duke Street, Thunderbolts Way and Salisbury Plains Road (this option will require a new easement to be established over private land to access the development footprint; however, it is noted that there is a paper road at this location)
- Option 3: Salisbury Street, Duke Street, Thunderbolts Way and Carlon Menzies Road before turning onto Hillview Road.

Each access corridor will require upgrades to the local road network (including road widening and intersection improvements). The EIS will include consideration of impacts associated with any proposed road upgrades.

Subject to detailed design, internal access tracks will also be established. All internal access tracks will be unsealed. The internal tracks will serve both as access for servicing and maintaining project infrastructure as well as fire trails and buffers.

3.3 Activities and uses

3.3.1 Construction

i Overview

Construction of the project is expected to be completed over approximately 24 months (refer Section 3.4). Unless the Secretary agrees otherwise, ACEN will only undertake construction activities on-site between 7:00 am to 6:00 pm Monday to Friday and 8:00 am to 6:00 pm Saturdays. Activities that are inaudible at non-project related residences may be undertaken outside these hours. Examples of inaudible activities that may be carried out on-site include PV module installation, bracket installation, rolling out cables, testing and commissioning, surveying and waste sorting.

Temporary infrastructure required during construction will include temporary construction compounds and laydown areas. Earthworks may be required for the preparation of the development footprint, including site levelling, access track formation and drainage works. The majority of infrastructure will be prefabricated off-site, delivered and assembled on-site.

Where required, additional or improved drainage channels, sediment control ponds and dust control measures will be implemented.

Laydown areas, waste handling, fuel and chemical storage areas will be strategically placed to minimise potential environmental impacts during construction.

ii Workforce

A workforce of approximately 400 personnel will be required on-site during peak construction.

Uralla Shire Council and local business owners will be consulted throughout the development and assessment of the project regarding managing potential impacts and opportunities for accommodation of the project's construction workforce.

The construction workforce will be sourced from the local area as far as practicable. The following options to house the project's non-local construction workforce will be considered further as part of the EIS:

- off-site accommodation with local providers (including the use of available rental and motel accommodation in surrounding townships and regional centres)
- use of available student accommodation at the University of New England's Armidale Campus (where this does not impact the university's ability to support students on campus)
- a standalone accommodation facility on-site (Section 3.2.3) or within proximity of the development footprint (with potential opportunities for reuse of this facility to be explored with Uralla Shire Council)
- use of accommodation facilities constructed by EnergyCo within the New England REZ.

Potential cumulative impacts on accommodation, infrastructure, and services will be considered in the EIS as part of the social impact assessment.

3.3.2 Operations

The operational lifespan of the project will be in the order of 30 years, unless the facility is re-powered at the end of the PV modules' technical life. The PV modules typically come with a performance warranty for 25 years from the manufacturer. The decision to re-power the plant will depend on the economics of solar PV technology and energy market conditions at that time. Should the PV modules be replaced during operations, the lifespan of the project may extend to up to 50 years. Throughout operations, a workforce of approximately 5–10 employees will be required.

It is anticipated that the facility will require regular maintenance throughout its operational life. This will include the following ongoing tasks:

- site maintenance, including:
  - vegetation maintenance
  - weed and pest management
  - fence and access road management
  - upgrading drainage channels
  - landscaping
- infrastructure maintenance, including:
  - panel cleaning
  - panel, inverter and tracker system repair (if required)
  - inverter replacement (within every 7–10 years)
  - equipment, cabling, substation and communications system inspection and maintenance.

Regular light vehicle access will be required throughout operations. Heavy vehicles may be required occasionally for replacing larger components of project infrastructure including inverters, transformers or components of the BESS. Highly technical O&M activities will typically be undertaken by specialist subcontractors and/or equipment manufacturers whereas routine activities such as fencing maintenance and vegetation management is likely to be offered to local contractors wherever available. Internal access tracks cleared during the construction phase will remain for use during operations.

ACEN intends to enable sheep grazing to resume on portions of the array areas following the completion of the construction of the project. A detailed protocol will be developed to ensure biosecurity is maintained and that grazing does not impact on the safe and efficient operation of the project or result in injury to farm workers, stock or O&M staff.

To ensure the optimal electricity production output for the project is maintained, the PV modules may need to be washed periodically to remove dirt, dust and other matter. Water for panel cleaning will be transported to the array areas via water trucks. Washing will not require any detergent or cleaning agents.

The operational workforce will also be responsible for ongoing security monitoring of the array areas and project infrastructure. Perimeter security cameras may be utilised to assist with monitoring the array areas.

3.3.3 Decommissioning

Once the project reaches the end of its investment and operational life, the project infrastructure will be decommissioned and the development footprint returned to its pre-existing land use, namely suitable for grazing of sheep and cattle, or another land use as agreed by the project owner and the landholder at that time.

Project decommissioning will require disturbance of the development footprint during the removal of equipment. A significant number of employees, including both staff and contractors, and vehicle movements will be required during the decommissioning stage of the project.

ACEN will attempt to recycle all dismantled and decommissioned infrastructure and equipment, where possible. Structures and equipment that cannot be recycled will be disposed of at an approved waste management facility.

3.4 Timing

Construction timing is dependent on the approval and construction of New England REZ transmission infrastructure, as well as the outcomes of the New England REZ access rights auction process.

Project construction is expected to commence in 2027, subject to relevant approvals, and will take approximately 24 months to complete, depending on scheduling of the construction works. It is anticipated that the project will be constructed in stages. The exact timing of each stage and the duration of the overlap between stages will be determined during detailed design following project approval. The timeframes assumed as part of the EIS and supporting technical assessments will be indicative only and will reflect a conservative upper limit of potential impacts from the project.

The sequencing of the project will be determined through detailed design, and subject to market demands, and is likely to involve overlap between activities but indicatively will involve the following steps:

- construction of supporting infrastructure and grid connection works
- construction of solar farm and associated infrastructure
- construction of BESS and associated infrastructure
- operation of facility
- decommissioning.

The project is expected to be commissioned during 2028 and will have an operational life in the order of 30 years unless the facility is re-powered at the end of the PV modules' technical life.

3.5 Alternatives considered

Alternatives to the project have been considered, including alternative locations, alternative project layouts and not proceeding with the project.

3.5.1 Alternative locations and technologies

The project investigation area is highly suitable for a solar farm and battery project as identified in Section 2.3.2. Alternative locations for a project of this scale are limited due to the requirements of surface area, topography, proximity to existing and/or proposed energy infrastructure and available network capacity, as well as the need to avoid major townships.

Alternatives to the project investigation area were considered by ACEN as part of the site identification process, including other potential sites in the New England REZ. The primary constraint in considering locations elsewhere in the REZ is the increasing distance from the proposed transmission network. Alternatives which are further away from the proposed New England REZ transmission infrastructure need long transmission lines and easements to connect into the network, which come with additional environmental and social impacts. As such, the selected project investigation area is considered optimal for development of the project.

Alternative technologies, including wind turbines and a standalone BESS, have also been considered by ACEN and in consultation with the project landholder. A combined solar and BESS project is considered the most appropriate use of the project investigation area given its available solar resource, proximity to the New England REZ transmission infrastructure and compatibility with existing agricultural land uses.

3.5.2 Alternative project layouts

Environmental and social constraints have, and will continue to be, a key consideration during the refinement of the project layout within the project investigation area (see Figure 3.2). The development footprint and indicative project layout on Figure 3.1 have been the subject of an iterative design process that has been informed by outcomes of preliminary biodiversity fieldwork, stakeholder engagement and constraints identification. The development footprint on Figure 3.1 avoids to the extent practicable:

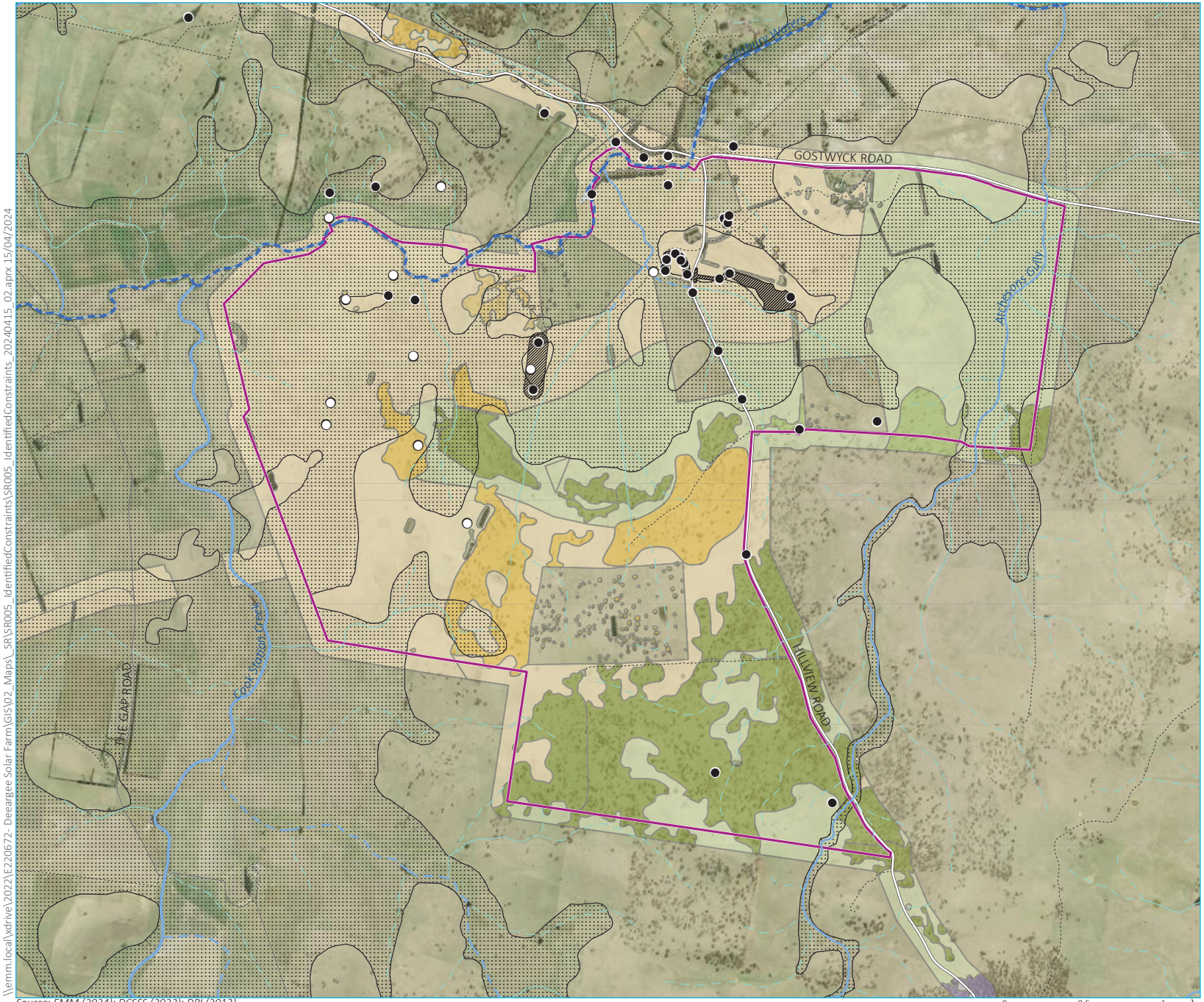
- areas of higher biodiversity value (including higher condition state plant community type (PCT) 3359 considered likely to align with listed threatened ecological communities (TECs))
- riparian areas and waterfront land associated with Salisbury Waters
- Uralla LEP listed heritage items (including setbacks from Gostwyck Chapel and Deeargee Woolshed).

An alternative location for the BESS was removed from the development footprint and project layout in response to feedback from Biodiversity, Conservation and Science (BCS) on potential impacts to TECs.

As discussed in Section 1.1, the project investigation area is south of the New England Solar and Battery Project (SSD-9255) and is partly within the southern array area, which was nominated for the development of a solar farm and associated infrastructure as part of the *New England Solar Farm EIS* (EMM 2019) before being withdrawn from the development application during the submissions phase. The project investigation area for Deeargee Solar and Battery Project has been informed by feedback from the local community during the public exhibition of the EIS for New England Solar, including a 4 km setback from Thunderbolts Way. A comparison of the development footprint for the Deeargee Solar and Battery Project and the southern array area that was withdrawn from the New England Solar and Battery Project is provided in Figure 3.3.

The final development footprint (including grid connection and site access) will be refined as part of the preparation of the EIS and will be informed by the outcomes of technical assessments (including biodiversity, Aboriginal cultural heritage, visual amenity and noise and vibration) and outcomes of engagement with community and regulatory stakeholders. As part of further design refinements, the following principles will be adopted:

- minimise vegetation clearing (areas of higher conservation value and/or native vegetation will be avoided, where possible)
- maximise use of previously disturbed land (i.e. land previously modified by agricultural operations, including cleared areas, established access tracks and local roads)
- minimise disturbance (footprints for project infrastructure will be limited to the minimum area required)
- protect significant Aboriginal cultural and historic heritage values (through the identification and evaluation of heritage sites as part of the preparation of the Aboriginal cultural and historical heritage assessments)
- minimise direct and indirect impacts on neighbouring landholders
- a flexible approach to design (responding to identified environmental impacts and constraints).



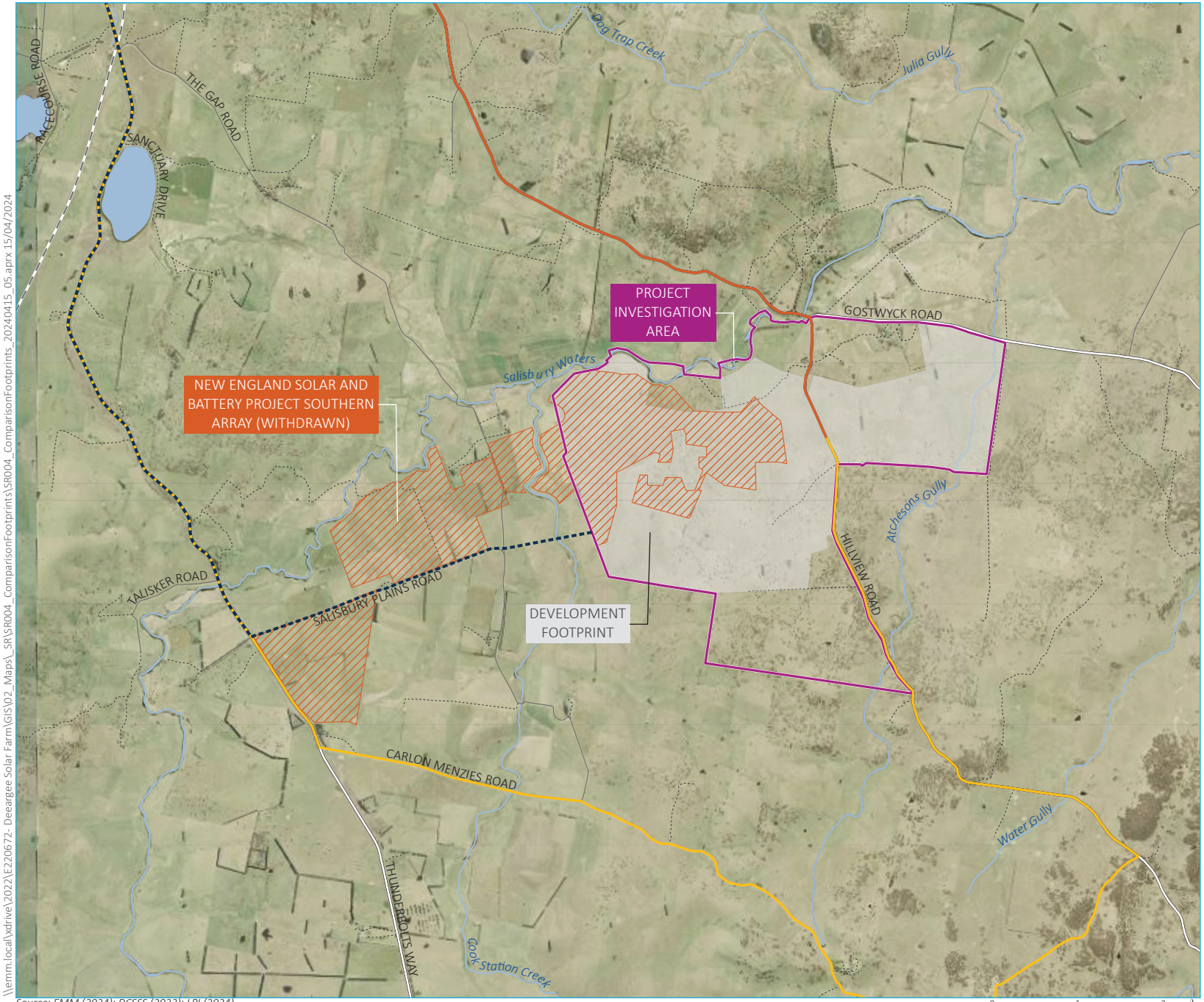
\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR005_IdentifiedConstraints\SR005_IdentifiedConstraints_20240415_02.aprx 15/04/2024

Source: EMM (2024); DCSSS (2023); DPI (2013)

Identified constraints

Deeargee Solar and Battery Project
Scoping Report
Figure 3.2

EMM
creating opportunities



KEY

- Project investigation area
- New England Solar and Battery Project southern array (withdrawn)
- Development footprint

Access road (option)

- Option 1
- Option 2
- Option 3

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); LPI (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR004_ComparisonFootprints\SR004_ComparisonFootprints_20240415_05.aprx 15/04/2024

Comparison between New England Solar and Battery Project's southern array (withdrawn) and Deeargee Solar and Battery Project

Deeargee Solar and Battery Project
Scoping Report
Figure 3.3

EMM
creating opportunities

3.5.3 Do nothing

The ‘do nothing’ scenario would allow for the continued use of the project investigation area for agricultural production; however, it would also forego the project benefits listed in Section 2.3.1, which include contributions to the development of the New England REZ and supporting Australia’s transition towards clean and renewable sources of energy. In addition, the local area and broader region would not realise the economic benefits to local and regional communities provided by direct employment opportunities and flow-on effects.

4 Statutory context

The key relevant statutory requirements for the project having regard to the EP&A Act, other NSW and Commonwealth legislation, and environmental planning instruments are summarised in Table 4.1. This table has been set out in accordance with the Scoping Report Guidelines and *State Significant Development - Preparing an Environmental Impact Statement* (DPIE 2021b) (EIS Guidelines), to cover the following:

- power to grant approval (i.e. approval pathway)
- permissibility
- consistent approvals
- Commonwealth approvals
- approvals not required (pursuant to Section 4.41 of the EP&A Act)
- mandatory matters for consideration.

Detailed consideration of relevant statutory requirements will be provided in the EIS.

Table 4.1 Statutory context

Approval	Requirement
Power to grant approval	
EP&A Act and Planning Systems SEPP	Part 4 of the EP&A Act relates to development assessment and consent; Part 4, Division 4.7 relates to the assessment of development deemed to be significant to the State (or SSD). Section 4.36(2) of the EP&A Act states that a: *...State environmental planning policy may declare any development, or any class or description of development, to be State significant development.* The Planning Systems SEPP identifies development that is SSD. Section 2.6(1) of the Planning Systems SEPP states: *(1) Development is declared to be State significant development for the purposes of the Act if:* *(a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and* *(b) the development is specified in Schedule 1 and 2.* The project meets both these requirements; it requires development consent, and is a development specified in Schedule 1 of the Planning Systems SEPP. Schedule 1 of the Planning Systems SEPP defines the following as SSD: *Electricity generating works and heat or co-generation* *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, waste, hydro, wave, solar or wind power) that:* *(a) has a capital investment value of more than $30 million.* The project is development for the purpose of electricity generation and will have a capital investment value of more than $30 million. Consequently, the project is SSD.

Table 4.1 Statutory context

Approval	Requirement
Permissibility	
State Environmental Planning Policy (Transport and Infrastructure) 2021	Section 2.36(9) of State Environmental Planning Policy (Transport and Infrastructure) 2021 states that: *...development for the purpose of a solar energy system may be carried out by any person with consent on any land.* Therefore, development for the purpose of a solar energy system may be carried out within the project investigation area with development consent.
Consistent approvals	
Overview	Section 4.42 of the EP&A Act outlines that the approvals listed below cannot be refused if necessary for carrying out an approved SSD and are to be consistent with the terms of the development consent for the SSD.
An approval under Section 138 of the NSW *Roads Act 1993*	Under Section 138 or Part 9, Division 3 of the *Roads Act 1993*, a person must not undertake any works that impact on a road, including connecting a road (whether public or private) to a classified road, without approval of the relevant authority, being either Transport for NSW or local council, depending upon the classification of the road. The interaction of the project with the local and regional road network will be addressed in the EIS. Should road upgrades or works within a designated road corridor be required, approval will be sought from the relevant authority.
Commonwealth approvals	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act aims to protect matters of national environmental significance (MNES). If an action will, or is likely to, have a significant impact on any MNES, it is deemed to be a 'controlled action' and requires approval from the Commonwealth Environment Minister or the Minister's delegate. A search of the Commonwealth Protected Matters Search Tool indicates that there are no World Heritage Properties or National heritage places within the vicinity of the project area. Preliminary biodiversity surveys have identified EPBC Act listed threatened species as occurring or as having the potential to occur within the project investigation area. Field surveys will be undertaken to determine whether threatened species and threatened species habitat is present. One EPBC Act listed TEC was identified within the project investigation area (White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland). The outcomes of additional fieldwork and project refinements will be used to determine whether a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water is required.
Native Title Act 1993	The Commonwealth *Native Title Act 1993* recognises and protects native title rights in Australia. It allows a native title determination application (native title claim) to be made for land or waters where native title has not been validly extinguished, for example, extinguished by the grant of freehold title to land. Claimants whose native title claims have been registered have the right to negotiate about some future acts, including mining and granting of a mining lease over the land covered by their native title claim. Where a native title claim is not registered, a development can proceed through mediation and determination processes, though claimants will not be able to participate in future act negotiations. There are no native title claims relevant to the investigation area.

Table 4.1 Statutory context

Approval	Requirement
Approvals not required	
Overview	Section 4.41 of the EP&A outlines the following approvals, permits etc are not required for an approved SSD.
Fisheries Management Act 1994	A permit under the *Fisheries Management Act 1994* to block fish passage or dredge or carry out reclamation work on water land will not be required pursuant to Section 4.41 of the EP&A Act. The project may require work in waterfront land to facilitate the upgrade of road crossings or establish new crossings of mapped watercourses within the development footprint. These works will be undertaken in accordance with NSW DPI *Policies and Guidelines on Fish-Friendly Waterway Crossings* (undated), *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI 2013), and NSW *Guidelines for Controlled Activities*.
Heritage Act 1977	An approval under Part 4, or an excavation permit under Section 139, of *the Heritage Act 1977* will not be required pursuant to Section 4.41 of the EP&A Act. Notwithstanding, there are no listed heritage items within the project investigation area.
National Parks and Wildlife Act 1979	An Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974* will not be required pursuant to Section 4.41 of the EP&A Act. There is potential for Aboriginal sites to occur within the project investigation area. Any Aboriginal cultural heritage sites identified will be avoided as far as practicable during the design process.
Rural Fires Act 1997	A bushfire safety authority under Section 100B of the *Rural Fires Act 1997* will not be required pursuant to Section 4.41 of the EP&A Act. A bushfire assessment in accordance with NSW Rural Fire Service (RFS) (2019) *Planning for Bushfire Protection* will be carried out to inform the EIS.
Water Management Act 2000	A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91 of the *Water Management Act 2000* will not be required pursuant to Section 4.41 of the EP&A Act. Construction work near or within mapped watercourses within the development footprint may be required. These works will be carried out in accordance with relevant guidelines for controlled activities.
Other NSW approvals	
Crown Land Management Act 2016 (CL Act)	The CL Act sets out how Crown land is to be managed. In particular, specific use of Crown land generally needs to be authorised by a lease, licence or permit. Crown Land is responsible for administering the CL Act. Portions of Salisbury Waters within the project investigation area are identified as Crown waterway. No project infrastructure is proposed to cross Salisbury Waters. All Crown roads within the project investigation area (Figure 2.2) have been transferred from the State of NSW to the project landholder.

Table 4.1 Statutory context

Approval	Requirement
Mandatory considerations – Considerations under EP&A Act and EP&A Regulation	
Section 1.3 of the EP&A Act	Relevant objectives of the EP&A Act are: *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,* *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,* *(c) to promote the orderly and economic use and development of land,* *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,* *(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),* *(g) to promote good design and amenity of the built environment,* *(j) to provide increased opportunity for community participation in environmental planning and assessment.* The above will be considered in the EIS.
Section 4.15 of the EP&A Act	Pursuant to Section 4.15 of the EP&A Act the consent authority must consider the following relevant matters for consideration: • relevant environmental planning instruments for the project including: – State Environmental Planning Policy (Biodiversity and Conservation) 2021 – State Environmental Planning Policy (Resilience and Hazards) 2021 – State Environmental Planning Policy (Transport and Infrastructure) 2021 – Uralla LEP 2012 • relevant development control plans • the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality • the suitability of the site for the development • the public interest. The above will be considered in the EIS.
Section 190 of the NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation)	Section 190 of the EP&A Regulation provides requirements for the form of an EIS: 1. An environmental impact statement must contain the following information— a) the name, address and professional qualifications of the person who prepared the statement, b) the name and address of the responsible person (the applicant), c) the address of the land: – to which the development application relates, or – on which the activity or infrastructure to which the statement relates will be carried out, d) a description of the development, activity or infrastructure, e) an assessment by the person who prepared the statement of the environmental impact of the development, activity or infrastructure, dealing with the matters referred to in this Division. 2. The person preparing the statement must have regard to— a) for State significant development—the State Significant Development Guidelines, or b) for State significant infrastructure—the State Significant Infrastructure Guidelines. 3. An environmental impact statement must also contain a declaration by the person who prepared the statement of the following— a) the statement has been prepared in accordance with this Division, and b) the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure, and c) the information contained in the statement is not false or misleading.

Table 4.1 Statutory context

Approval	Requirement
Mandatory considerations – Considerations under other legislation	
NSW *Biodiversity Conservation Act 2016*	The likely impact of the project on biodiversity values will be assessed in the biodiversity development assessment report (BDAR). The Minister for Planning may (but is not required to) further consider under the NSW *Biodiversity Conservation Act 2016* the likely impact of the project on biodiversity values.
Mandatory considerations – Environmental planning instruments	
State Environmental Planning Policy (Resilience and Hazards) – Section 3.7	The EIS will consider the following relevant departmental guidelines: • *Applying State Environmental Planning Policy No. 33 Hazardous and Offensive Development* • *HIPAP No. 3 – Risk Assessment* • *HIPAP No. 12 – Hazards.*
Uralla LEP	The EIS will consider: • the relevant objectives and land uses for RU1 zone • Clause 4.1A Subdivision of land in Zone RU1 for non-agricultural land uses • Clause 6.1 Earthworks.
Mandatory considerations Development control plans	
In accordance with Section 2.10 of the Planning Systems SEPP, development control plans do not apply to SSD and are not a relevant consideration for the project.	

5 Engagement

This chapter outlines the key stakeholder and community engagement carried out during the scoping phase of the project. It provides an overview of the strategic planning and engagement approach, stakeholder identification undertaken, as well as engagement activities. A summary of community views expressed about the project is also provided. A wide range of responses were received from stakeholders, which will be used to inform the engagement activities planned to be undertaken as part of preparing the EIS.

ACEN's approach to the engagement undertaken to date, and the engagement principles to be followed during the preparation of the EIS will be undertaken in accordance with the following guidelines:

- *Large Scale Solar Energy Guideline* (DPE 2022a)
- *Undertaking Engagement Guidelines for State Significant Project* (DPIE 2021c)
- *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021d) (SIA Guideline)
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a).

In accordance with *Undertaking Engagement Guidelines for State Significant Projects* (DPIE 2021c), ACEN are committed to:

- early and ongoing engagement, during project planning, development and impact assessment
- consideration of diverse viewpoints to better understand potential issues and impacts
- being open and transparent when providing information and engaging with stakeholders
- providing readily accessible project information via multiple communication channels and assistance with enquiries
- actively listening and demonstrating how feedback has been considered and addressed as part of developing the project and undertaking the impact assessment.

5.1 Engagement context

The shift to renewables in Australia is accelerating in line with the Commonwealth Government's commitment to deliver net zero emissions by 2050. This project is being developed during a time of unprecedented focus on energy supply and security, across all levels of government and within communities.

The project is within the New England REZ and there are multiple renewable energy and generation projects at various stages of the planning and assessment process within the Uralla Shire LGA and surrounds. ACEN are conscious of the impact that consultation on all of these projects is having on the local community.

As owners and operators of the New England Solar and Battery Project, ACEN and its employees are established members of the local community and will continue to use their knowledge and existing relationships to deliver targeted engagement that's informed by, and responds to, feedback from community stakeholders. ACEN is a signatory to the Clean Energy Council's *Community Engagement Best Practice Charter for Renewable Energy Developments.*

5.2 Community engagement plan

ACEN recognises the importance of early and effective engagement and is committed to implementing a transparent and inclusive approach during planning, development and impact assessment.

A Community Engagement Plan (CEP) has been prepared for the project, to address the needs of both the scoping and EIS phases. The CEP is a live document, which will be updated in response to key stakeholder and community feedback received, as required.

A key objective of the CEP is help ensure open and inclusive engagement is undertaken. It includes a schedule of activities for providing timely and relevant project information, across a number of different communication channels, tailored to suit identified stakeholders needs. The level of engagement proposed for the project varies depending on the targeted stakeholder and will include a combination of informing, involving and collaborating.

The CEP will be updated to refine the communication and engagement activities to be undertaken during the EIS phase of the project. Feedback received during scoping phase engagement will be considered by the technical teams as part of identifying study-specific impact mitigation and management measures, as required.

5.3 Scoping phase consultation

5.3.1 Community stakeholders

Engagement with the community (including near neighbours) has intensified throughout the scoping phase.

In January 2024, ACEN published a project website (https://acenrenewables.com.au/project/deeargee-solar/), dedicated email address (info@deeargeesolar.com.au) and project hotline (1800 864 880). ACEN also undertook targeted phone calls and posted a letter and project fact sheet to all landholders within 5 km of the project investigation area. Community information sessions were held in person in Uralla in February 2024 and ACEN's local office in Uralla is periodically open to drop-ins.

Engagement with immediate neighbours and potentially directly impacted neighbours (i.e. those within an approximately 5 km buffer of the development footprint) is ongoing through face-to-face meetings, letters, emails and phone calls.

Feedback from the community has been varied and includes both positive and negative views on a range of topics. Responses from community engagement with concerns about the project have included the following:

- Two neighbouring landholders expressed concerns about the loss of prime agricultural land and BSAL as a result of the project.
- Two neighbouring landholders expressed concerns about the change to the landscape, including the visual impact of the project and the cumulative effect of multiple projects in the area.
- One local community member expressed concerns about the role renewable projects have in creating divisions between neighbours in the community.

Concerns raised during community engagement will be addressed during ongoing consultation and responses will be summarised in the EIS.

Community members have also communicated their support for the project with one community member commending ACEN's local presence and the timely provision of information to the community about their projects. There is a lot of local interest in the ability to co-locate agriculture and solar energy generation by continuing to graze sheep between PV module rows.

Community engagement will continue to be carried out during the EIS phase in line with the CEP.

5.3.2 Government and regulatory stakeholders

Government and regulatory stakeholder consultation carried out during the scoping phase is detailed in Table 5.1.

Table 5.1 Summary of stakeholder engagement activities

Stakeholder	Engagement type	Key outcome
DPHI	Scoping meeting	ACEN provided an overview of the project, assessments undertaken to date and engagement outcomes. DPHI asked questions about the project's impacts on BSAL (Section 6.7.2) and the workforce accommodation strategy (Section 3.3.1ii). Further work will be undertaken as part of the EIS to: • verify the land and soil capability class of land within the development footprint • explore opportunities for accommodating the project's workforce that maximise the use of available infrastructure and minimise the number of on-site accommodation facilities built to support New England REZ infrastructure.
BCS	Meeting Site visit	EMM and Biosis met with BCS to introduce the project and provide an overview of preliminary vegetation mapping and threatened species surveys undertaken during the scoping phase. In response to feedback from BCS, one BESS option has been removed from the development footprint and project layout. The development footprint has also been amended to maximise the use of Category 1 exempt land where possible.
Uralla Shire Council	Meeting	Enquiries and discussions on project location, site access, project schedule and timelines, REZ connection location, community and stakeholder engagement plans, the Voluntary Planning Agreement, and workforce accommodation were held between Uralla Shire Council and ACEN. No concerns were raised by Uralla Shire Council about the project; however, it was noted that Gostwyck Road (access corridor option 1 on Figure 3.1) is not a preferred access route.
EnergyCo	Meeting	ACEN met with EnergyCo to discuss and confirm the proposed location of the study corridor for the New England REZ transmission infrastructure (including East Hub) and potential connection options for the project.

5.4 EIS phase consultation

During the preparation of the EIS, ACEN will consult with relevant local, State and Commonwealth Government authorities, infrastructure and service providers, community groups, Traditional Owners, neighbours and affected landowners. ACEN is committed to establishing a socially sustainable project by:

- maintaining their local presence within Uralla throughout the EIS and assessment phase
- continuing their genuine and consistent engagement with the local community and key stakeholders
- maintaining their existing relationships with stakeholders.

Aboriginal stakeholders will be identified and consulted with during the preparation of the EIS in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a), and the recently released *First Nations Guidelines* (OECC 2022).

EnergyCo will be consulted with in relation to activities impacting the transmission network and connection requirements to the New England REZ transmission infrastructure.

Consultation during the development of the EIS will aim to:

- proactively inform, consult and involve stakeholders using clear and consistent key messages
- continue to collaborate with key stakeholders to identify potential issues, impacts, opportunities and benefits
- communicate the progress of the project and key findings or outcomes of assessments
- enable stakeholders to have input into the preparation of the EIS, project planning, investigate opportunities for visual treatment and identify opportunities for benefit sharing
- implement response and feedback strategies to address stakeholder concerns and use these to inform the evolution of the project.

A range of tools and methods will be used to communicate and engage with the community and other stakeholders during preparation of the EIS, with examples provided in Table 5.2. Issues raised during engagement will be documented by the project team to inform the project design, environmental assessment and the preparation of the EIS.

Table 5.2 Engagement tools and methods during preparation of the EIS

Engagement methods	Detail
Advertising	Advertising in local media to advise of upcoming consultation opportunities and provide project updates.
Briefings	Formal letters or meetings with key stakeholders including landowners, MPs, Councillors and council staff to provide updates on the project.
Door-knocking	Project representatives will go door to door to speak with impacted landowners and neighbours and/or provide them with project briefings and information.
Drop-in sessions	Multi-hour time periods when stakeholders can drop in to speak to the project team, view documents and plans and ask questions.
Email inbox	A dedicated project inbox for managing community and stakeholder correspondence.
Letters	Mail containing information, responses or requests to a particular household, business or individual.
Media releases / statements	Proactive or responsive media statements or announcements provided to the media to provide updates, address concerns and clarify information.
Meetings	One-on-one or small group meetings to discuss project issues and concerns in more detail.
Newsletters	Regular project information distributed by email or in hard copy to registered stakeholders. Project information may also be provided periodically via Uralla Wordsworth.
Phone line	A dedicated number for stakeholders to contact ACEN.
Pop-up stalls	An engagement booth/stall set up at community events (such as Seasons of New England).
Site tours	An escorted tour of the project investigation area to understand how the project is located geospatially and fits into the surrounding environment.
Surveys	Online or offline surveys to obtain input and feedback on project decision-making.
Social media	Online social connection platforms used to share project information and interact with stakeholders.
Website	Updates to the website including descriptions of the project, company information, frequently asked questions, plans, maps, media releases and contact information.

6 Proposed assessment of impacts

A preliminary environmental assessment has been carried out to identify matters requiring further assessment in the EIS and the level of assessment that should be carried out. In accordance with the Scoping Report Guidelines (DPIE 2021a), the following factors have been considered in the identification of matters needing further assessment for the project:

- the scale and nature of the likely impact of the project and the sensitivity of the receiving environment
- whether the project is likely to generate cumulative impacts with other relevant future projects in the area
- the ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the scoping phase.

The following sections of this chapter present the identified matters requiring further assessment and the proposed approach to the respective assessments. In addition to the preliminary environmental assessment presented herein, preliminary technical studies have been carried out for the key issues of visual amenity and social, as well as the results of preliminary biodiversity surveys and investigations. These preliminary technical studies have commenced to ensure that the values of the project investigation area and surrounds are taken into consideration early in the planning and design of the project. Measures implemented through the scoping phase to avoid and minimise impacts are also described in the following sections.

Matters have been categorised as per the categories identified in the Scoping Report Guidelines (DPIE 2021a). A scoping summary table in accordance with the Scoping Report Guideline is included in Appendix B. Also, in accordance with the Scoping Report Guideline, the level of assessment identified for each matter is presented in Table 6.1.

Table 6.1 Level of assessment required in EIS

Level of assessment	Aspect
Detailed	Biodiversity
	Visual
	Land
	Waste
Standard	Social and economics
	Traffic
	Heritage – Aboriginal cultural
	Heritage – Historical
	Water
	Noise and Vibration
	Hazards and risks

6.1 Biodiversity

Preliminary biodiversity assessments have been undertaken for the project by Biosis Pty Ltd (Biosis) to inform the scoping and design of the project. Preliminary site investigations including rapid assessments of native vegetation and fauna habitat types across the project investigation area were completed in August 2023. Vegetation mapping and targeted surveys have also been undertaken within the project investigation area.

6.1.1 Existing environment

The project investigation area is within the New England Tablelands Interim Biogeographic Regionalisation for Australia (IBRA) region and the Armidale Plateau subregion. The majority of vegetation within the project investigation area is highly disturbed due to clearing practices and historic pasture improvement for livestock grazing. Native vegetation contains a moderate to high level of disturbance, with the absence of midstory vegetation, and depleted diversity of native species within the ground layer.

Biodiversity assessment methods to establish the existing environment have included:

- collection of floristic data to validate grassland/woodland PCT mapping and test PCTs against TEC diagnostic characteristics and condition thresholds
- broad-scale mapping of PCT extent and condition and consideration of the presence of derived native grassland (DNG) communities
- collection of preliminary species lists
- broad-scale mapping of other features
- preliminary review of historical aerial imagery.

i Plant community types and threatened ecological communities

Two PCTs have been identified in the project investigation area (Figure 6.1), PCT 3344 New England Ribbon Gum Grassy Forest and PCT 3363 Western New England Blakely Red Gum-Box Grassy Forest. PCT 3359 New England Hills Stringybark-Box Woodland was also identified within one of the potential access corridors. A summary of the PCTs and their alignment with BC Act and EPBC Act listed threatened ecological communities (TECs) is provided in Table 6.2.

Table 6.2 Plant community types and threatened ecological communities within the project investigation area

PCT	Area (ha)[1]	BC Act listed (status)	EPBC Act listed (status)
3344 - New England Ribbon Gum Grassy Forest	636	• Ribbon Gum—Mountain Gum—Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion (endangered)	No
3363 - Western New England Blakely Red Gum-Box Grassy Forest	566	• White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (herein referred to as Box Gum Woodland) (critically endangered)	• White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (critically endangered)

Notes: 1. Does not include land within the project investigation area that's been identified as Category 1 exempt land or exotic vegetation.

One of these TECs, Box Gum Woodland, is a serious and irreversible impact (SAII) entity under the *Biodiversity Assessment Method* (BAM) (DPIE 2020a).

ii Threatened flora and fauna

The project investigation area contains a variety of habitat for threatened species including patches of native vegetation, open farmland areas, waterways, rocky outcrops, hollow-bearing trees and stick nests.

There are a number of watercourses within the project investigation area, including tributaries associated with Salisbury Waters, Cook Station Creek and Atchesons Gully (Figure 6.6). Riparian areas within the project investigation area are in poor condition, with waterways largely lacking fringing vegetation, presence of introduced species (namely *Willows Salix spp*.) along waterways and occurrence of erosion along banks. Watercourses and farm dams may provide marginal habitat for threatened frogs.

Background searches identified 33 threatened flora species and 100 threatened fauna species recorded (DPE 2023) or predicted to occur (DCCEEW 2023) within 20 km of the project investigation area. Of these, 5 threatened flora species and 31 threatened fauna species are considered to have a moderate likelihood of occurrence within the project investigation area and require further assessment in the BDAR.

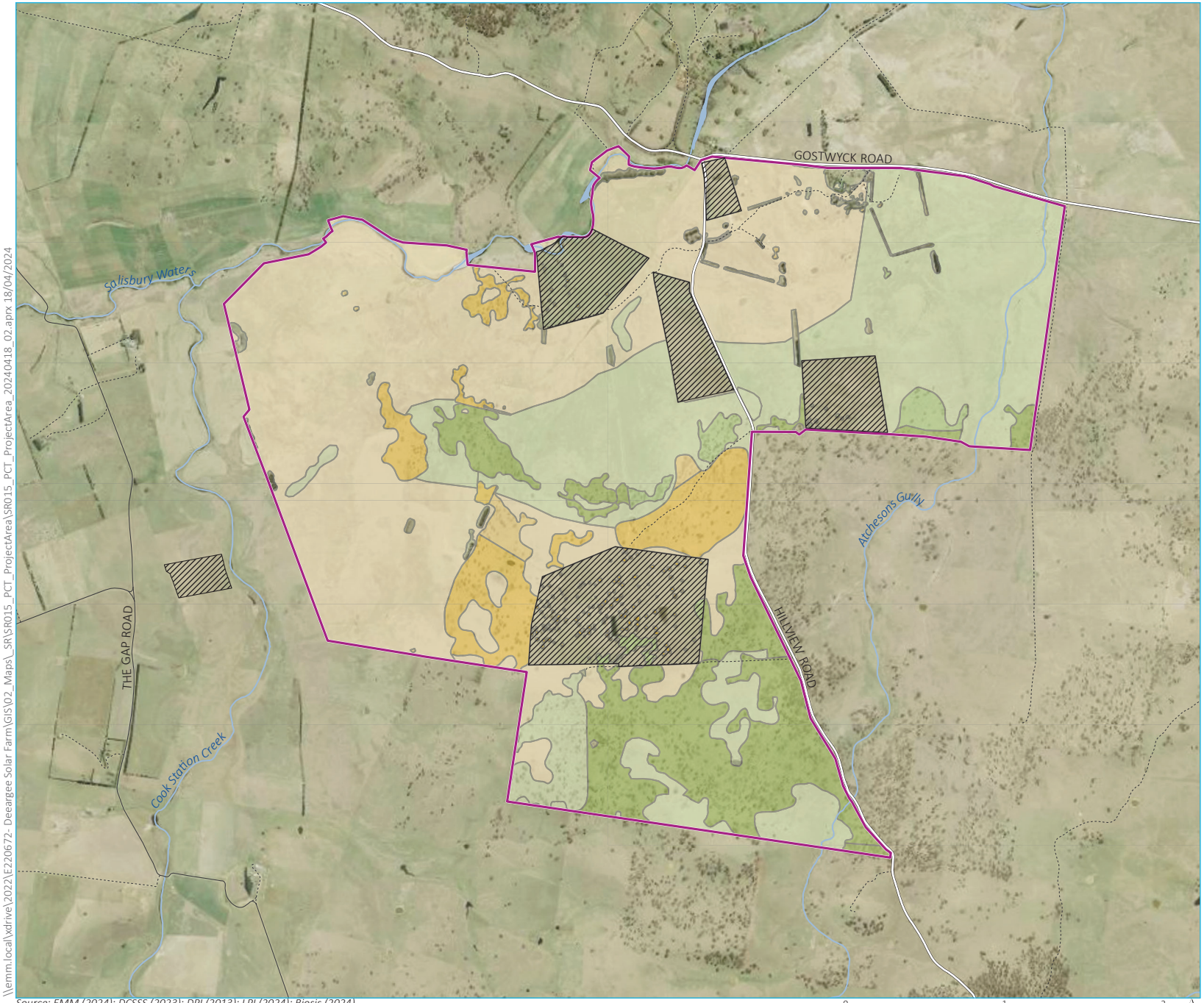
6.1.2 Potential impacts

Impacts on native vegetation, native fauna and terrestrial ecosystems are likely to occur as a result of the project. The construction of solar and battery infrastructure, access roads and associated facilities for the operation of the project will result in the direct loss of vegetation and some reshaping of the topography and landscape. These activities may result in a direct and long-term impact on the occurrence, extent and coverage of native vegetation, including threatened species and ecological communities. Indirect impacts such as shading, may also result in the modification of feeding, refuge and breeding habitat for native fauna, including habitat fragmentation and the loss of habitat connectivity.

Direct and indirect impacts during construction may include clearing, sedimentation, dust deposition, erosion, weed introduction and/or spread, vehicle/machinery strike, light and noise pollution, and shading and vibration from the movement of equipment and vehicles. Cumulative impacts may also occur in the context of development in the broader New England REZ area.

Biodiversity values have been investigated early in the development process and have been considered in the refinement of the development footprint (including removal of one BESS option to avoid potential impacts to a TEC). Biodiversity values will be a key constraint considered throughout the design development to avoid and minimise impacts as far as practical. Design development will aim to avoid remnant vegetation, TECs and threatened species habitat where practicable. As shown on Figure 6.1, the development footprint has already been refined to avoid areas of higher biodiversity value (including higher condition state PCT 3363).

Impacts to terrestrial biodiversity during operation are likely to be minimal and limited to the development footprint. Traffic and maintenance activities may present a small risk to some fauna species.



KEY

- Project investigation area
- Category 1 exempt land

Plant community type

3363 | Western new england blakelys red gum-box grassy forest

- Derived native grassland
- Low
- Moderate
- Scattered trees

3344 | New england ribbon gum grassy forest

- Derived native grassland
- Low
- Moderate
- Scattered Trees

3359 | New england hills stringybark-box woodland

- Derived native grassland
- Low
- Moderate
- Scattered trees

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); DPI (2013); LPI (2024); Biosis (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR015_PCT_ProjectArea\SR015_PCT_ProjectArea_20240418_02.aprx 18/04/2024

Plant community types

Deeargee Solar and Battery Project
Scoping Report
Figure 6.1

EMM
creating opportunities

6.1.3 Assessment approach

The project is SSD, triggering entry into the Biodiversity Offset Scheme (BOS). Field surveys and a BDAR will be required to address the requirements of the BC Act, including the BAM, and EPBC Act. The BDAR will be prepared in accordance with the BAM detailing the project and the associated biodiversity values, how the project has avoided and minimised impacts to biodiversity, and an impact assessment for those residual impacts that could not be avoided. This will include an impact assessment in accordance with the EPBC Act and NSW *Fisheries Management Act 1994* (FM Act), where relevant.

The approach for the BDAR will be based on avoiding and minimising impacts, with unavoidable residual impacts offset through the BOS. A referral in relation to MNES under the EPBC Act may be required do address potential impacts to TECs and nationally threatened species. MNES will be assessed within the BDAR as a streamlined assessment under the Commonwealth/NSW Bilateral Agreement.

A desktop report and preliminary field assessments have been completed; however, further detailed field assessment, data analysis and reporting as part of the scope of the BDAR will include:

- A review and update if required of background searches including:
  - NSW BioNet Atlas of NSW Wildlife for BC Act listed threatened entities
  - review of the Protected Matters Search Tool for EPBC Act MNES
  - relevant LEPs and SEPPs.
- Broad condition states assigned to develop vegetation zones in accordance with the BAM.
- Formalise a detailed land category assessment (LCA) with a review of land categorisation under the NSW *Local Land Services Act 2013*. This will clarify the native vegetation management and land use regime and where applicable to do so, the potential for land to be mapped as Category 1 exempt land. Land mapped or determined as Category 1 exempt can be excluded from the BAM and is not required to be assessed, with exception to prescribed impacts. The LCA does not remove the requirement to address matters under the EPBC Act.
- Establishment of a BAM calculator project for the assessment to determine the requirements for threatened species survey.
- Field investigation in accordance with the BAM, including floristic plot surveys and targeted searches for threatened flora and fauna species.
- Identification of any impact avoidance, mitigation and offset measures necessary for the project.
- Undertake analysis of field data to determine impacts to threatened species and native vegetation and calculate any offset requirement in accordance with the BAM.
- If required, engage species experts, as required, where field surveys could not sufficiently determine the presence/absence of candidate species credit species, due to constraints such as seasonal survey restrictions or requirements for replicate surveys follow weather events etc.

6.2 Visual

A preliminary visual impact assessment (PVIA) has been prepared by EMM (Appendix C) in accordance with the *Large-Scale Solar Energy Guideline* (DPE 2022a) and supporting *Technical Supplement – Landscape and Visual Impact Assessment* (DPE 2022b) (referred to as the Technical Supplement).

6.2.1 Existing environment

i Landscape features

The landscape surrounding the project investigation area is dominated by agricultural plains. Other prominent features within the landscape include some remnant vegetation, scattered bushland trees, watercourses and rural residences.

For the purposes of the PVIA, the project investigation area and surrounds have been broken up into three broad categories, defined by vegetation, landform, land use and presence of water:

- Water corridors – water courses that delineate that landscape with depressions and vegetation
- Agricultural plains – Cleared lands for grazing and cropping
- Remnant bushland – Forested areas usually on hilltops and upper slopes.

The area surrounding the project investigation area is sparsely populated with 18 non-project related residences within 4 km of the project investigation area, including 1 within 500 m (R6 on Figure 6.2).

ii Outcomes of engagement

Two neighbouring landowners have expressed concern over the change to the landscape, the visual impact and the cumulative effect of multiple projects in the area.

6.2.2 Potential impacts

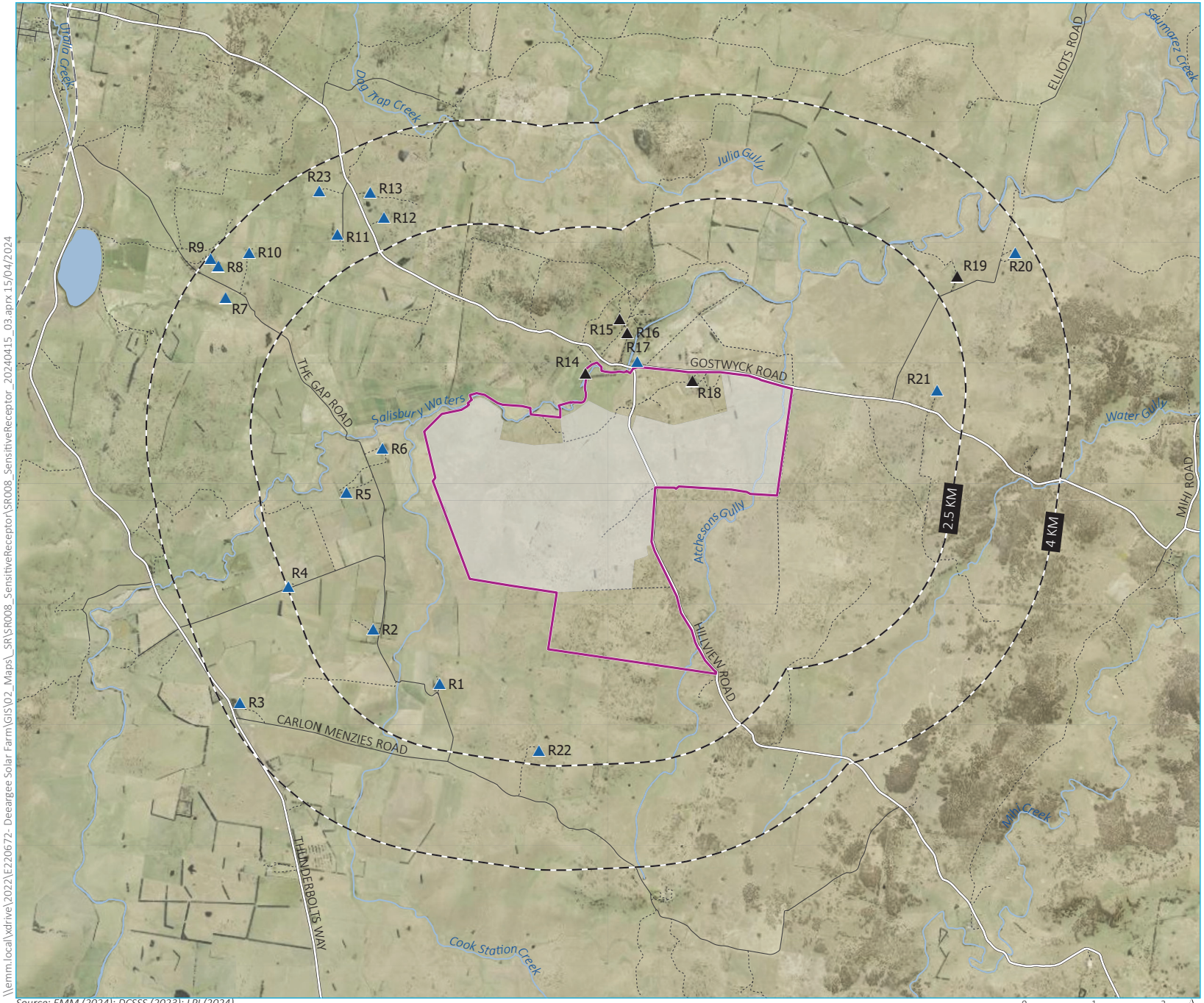
i Overview

The project has potential to result in visual amenity impacts to scattered rural residences surrounding the project investigation area. Project infrastructure may also be visible to motorists travelling along Gostwyck Road and other local roads, including Thunderbolts Way, Hillview Road, Salisbury Plains Road and The Gap Road. Concurrent views of project infrastructure and other renewable energy generation and transmission developments may also be possible.

ii Preliminary visual impact assessment

a Viewpoint selection and preliminary assessment tool

In accordance with the Technical Supplement (DPE 2022b), all viewpoints from public roads and rail lines within 2.5 km of the project investigation area must be identified and assessed. Six road viewpoints have been identified, including Thunderbolts Way, Salisbury Plains Road, Gostwyck Road, Hillview Road, The Gap Road and Carlon Menzies Road.



KEY

- Project investigation area
- Development footprint
- Distance buffer
- Non-project related sensitive receptor
- Project-related sensitive receptor

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR008_SensitiveReceptor\SR008_SensitiveReceptor_20240415_03.aprx 15/04/2024

Sensitive receptors

Deeargee Solar and Battery Project
Scoping Report
Figure 6.2

EMM
creating opportunities

In accordance with the Technical Supplement (DPE 2022b), public and private viewpoints within 4 km of the project investigation area must be identified and assessed. Three public viewpoints have been selected representing views from Gostwyck Chapel, Deeargee Woolshed and Salisbury Court. Eighteen non-project related residences have been identified within 4 km of the project investigation area and have been considered as part of the PVIA.

As part of the preliminary assessment tool, the horizontal and vertical field of view for 6 viewpoints from the public road network, 3 public viewpoints and 19 viewpoints from non-project related residences have been determined in accordance with the Technical Supplement (DPE 2022b). A detailed assessment is required when the degree of visibility of the development within the viewpoint's vertical and horizontal field of view, which is influenced by distance from the development, height elevation changes and the width of the project, is above the thresholds outlined in Table 1 of the Technical Supplement (DPE 2022b).

A summary of the results of the preliminary assessment tool is provided in Table 6.3 and viewpoint locations are shown on Figure 3.1 of Appendix C.

Table 6.3 Results of visual impact preliminary assessment tool

Viewpoint reference	Location	Representative receptors	Distance to development (m)	Relative height difference (m)	Vertical FOV (degrees)	Horizontal FOV (degrees)	Detailed assessment required
PVP-1	1057 The Gap Road	R1	1,560	40	1	65	No
PVP-2	900 The Gap Road	R2	1,560	40	1	59	No
PVP-3	2894 Thunderbolts Way	R3	3,760	40	1	35	No
PVP-4	161 Salisbury Plains Road	R4	2,460	40	1	49	No
PVP-5	664 The Gap Road	R5	1,260	40	2	76	Yes
PVP-6	645 The Gap Road	R6	600	40	3	88	Yes
PVP-7	326 The Gap Road	R7	3,450	40	1	41	No
PVP-8	264 The Gap Road	R8	3,790	40	1	40	No
PVP-9	245 The Gap Road	R9	3,990	40	1	39	No
PVP-10	The Gap Road	R10	3,620	40	1	43	No
PVP-11	544 Gostwyck Road	R11	3,000	45	1	50	No
PVP-12	605 Gostwyck Road	R12	2,925	55	1	56	No
PVP-13	565 Gostwyck Road	R13	3,310	50	1	53	No
PVP-14	Gostwyck Road	Gostwyck Chapel	820	45	3	161	Yes
PVP-15	Gostwyck Road	Deeargee Woolshed	310	40	4	191	Yes
PVP-16	3031 Thunderbolts Way	Salisbury Court	5,000	60	1	27	No
PVP-17	979 Gostwyck Road	R17	1,200	40	2	140	Yes
PVP-18	310 Gostwyck War Service Road	R20	3,780	40	1	31	Yes
PVP-19	1 The Gap Road	R21	1,950	95	2	76	Yes

Table 6.3 Results of visual impact preliminary assessment tool

Viewpoint reference	Location	Representative receptors	Distance to development (m)	Relative height difference (m)	Vertical FOV (degrees)	Horizontal FOV (degrees)	Detailed assessment required
PVP-20	679 Carlon Menzies Road	R22	3,940	105	1	46	No
PVP-21	679 Carlon Menzies Road	R23	3,820	100	1	48	No
PVP-22	427 Carlon Menzies Road	R24	2,340	55	1	65	No
RVP-1	Thunderbolts Way	Motorists	4,550	50	1	29	No
RVP-2	Salisbury Plains Road	Motorists	1,040	40	2	86	Yes
RVP-3	The Gap Road	Motorists	2,450	40	1	58	No
RVP-4	The Gap Road	Motorists	2,460	40	1	48	No
RVP-5	Gostwyck Road	Motorists	1,320	55	2	99	Yes
RVP-6	Gostwyck Road	Motorists	1,025	40	2	60	No
RVP-7	Hillview Road	Motorists	790	50	3	175	Yes

The preliminary assessment tool has identified that detailed assessments are required for ten of the preliminary viewpoints.

b Viewshed mapping

A preliminary viewshed map has been prepared and conservatively assumes that infrastructure is constructed within the entire project investigation area (Figure 2.2 of Appendix C). The preliminary viewshed mapping is based on topography alone and does not consider intervening elements such as vegetation and structures that may screen views of project infrastructure. The topography of the surrounding area limits opportunities to see the project in its entirety. Views are variable with hilltops and higher slopes facing the project having the potential for more visibility. Private viewpoint R6 has the potential to see the widest area of the project, given its proximity to the project investigation area and public viewpoints with the highest potential visibility of the project along Gostwyck Road and The Gap Road.

A reverse viewshed map has also been prepared, which considers potential visibility of project infrastructure from 19 non-associated residences within 4 km of the project investigation area (Figure 2.3 of Appendix C). The reverse viewshed map conservatively assumes that infrastructure is constructed within the entire project investigation area and is also based on topography alone (i.e. does not consider intervening elements that may screen views of project infrastructure). The reverse viewshed indicates that the western edge of the project investigation area is likely to be visible to the highest number of dwellings, as solar panels located in areas of higher elevation will be visible to a larger number of dwellings.

6.2.3 Assessment approach

A detailed landscape and visual impact assessment (LVIA) will be prepared to support the EIS and will include an assessment of the likely visual impacts of the project (including any glare, reflectivity and night lighting) on surrounding residences and scenic or significant vistas, air traffic and road corridors in the public domain.

The assessment will be undertaken with reference to the *Large-Scale Solar Energy Guideline* (DPE 2022a) and the Technical Supplement (DPE 2022b) and include a detailed viewpoint assessment for viewpoints identified in the PVIA (including strategies to mitigate these impacts). The detailed assessment will be prepared in accordance with the process described in Figure 5 of the Technical Supplement (DPE 2022b) and will include:

- refining and classifying viewpoints identified in the PVIA
- determining the magnitude of impact and visual sensitivity from selected viewpoints (including preparation of photomontages)
- determining the visual impact
- identifying performance objectives and mitigation measures.

Where relevant, the LVIA will recommend mitigation measures to reduce the project's visual amenity impacts (e.g. vegetation screening). Possible mitigation measures will be discussed with relevant stakeholders during the preparation of the LVIA.

Targeted community engagement is proposed with surrounding landholders in relation to visual amenity impacts.

A glint and glare assessment will also be undertaken in accordance with the requirements of Appendix C of the *Large-Scale Solar Energy Guideline* (DPE 2022a).

6.3 Social

A social impact assessment (SIA) scoping report has been prepared to support this scoping report (Appendix D).

6.3.1 Existing environment

The local area comprises the sparsely populated localities of Gostwyck, Salisbury Plains, Mihi and Enmore, and lies within the Uralla LGA.

The social locality or local study area for the SIA includes all land within the project investigation area along with the community of Gostwyck, Salisbury Plains, Mihi and Enmore (local area), key urban areas, including the townships of Uralla and Armidale, the Uralla Shire (regional area) and the New England REZ. Social baseline characterisation utilised data generated by the Australian Bureau of Statistics (ABS) at the Statistical Area 1 (SA1) geographical classification. One SA1 area (110001118811) has been included in the local study area.

Surrounding townships are likely to be sources of labour, goods and services which will support the project and subsequently experience social impacts and benefits. Nearby regional communities considered relevant to the SIA include Uralla and Armidale.

The regional study area encompasses:

- Uralla Shire LGA and
- New England REZ which spans seven LGAs: Tenterfield Shire, Glen Innes Severn, Inverell, Armidale Regional, Uralla Shire, Tamworth Regional and Walcha.

All LGAs will experience some direct and indirect impacts, mostly related to workforce accommodation, local procurement opportunities and employment.

The local study area has a combined total population of 142, while the regional study area has a population of 136,510 (ABS 2021). Agriculture is the primary driver of economy within the local study area and is an important source of employment within the broader region.

Armidale is the largest centre to the project with a population of 23,967 and Uralla with a population of 2,385. Other nearby regional communities of Gostwyck, Salisbury Plains, Mihi and Enmore have considerably smaller populations (142 total).

6.3.2 Potential impacts

Potential social impacts and benefits identified as part of the SIA scoping report include:

- impacts to livelihood (such as the potential for lowered agricultural productivity caused by disruption to farming and potential biosecurity and weed risk due to increased vehicle activity)
- health and wellbeing impacts (such as increased noise and public safety issues due to trucks and increased vehicle movements)
- impacts to access and surroundings (such as changes to the landscape due to the construction and operation of the project)
- impacts on culture and community (such as changes in the community due to a new workforce entering the area)
- increased opportunities for employment and occupational training
- economic in-flows to the local community
- opportunities for diversification of landholder income.

The project will look to initiate measures that maximise positive impacts and benefits (such as utilising local workforce and supplies), in addition to other mitigation measures to manage potential negative impacts.

6.3.3 Assessment approach

Potential social impacts and benefits will be assessed in accordance with the requirements of the *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021d) and will utilise the risk assessment matrix presented in the *Technical Supplement Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021e). The SIA will be led by a suitably qualified Social Scientist.

The identification of social impacts will be informed by community and stakeholder engagement activities, as well as SIA field study activities, and will be conducted in an integrated manner to ensure consistency, reduce duplication, and allow for management of consultation fatigue. In addition, findings from the technical assessments will be considered to understand the consequences to the community and existing research and previous SIAs will inform the identification of the social impacts. Subsequent phases of the SIA will include:

- an update of the baseline social profile to ensure that any further baseline data relevant to the impacts identified are obtained
- further validation of the area of social influence and identification of affected communities and vulnerable groups
- a comprehensive assessment and evaluation of social impacts against existing baseline conditions.

6.4 Traffic

6.4.1 Existing environment

The project investigation area is near key transport corridors including the New England Highway (8 km to the north-west) and Thunderbolts Way (4 km to the west) (Figure 1.1). As discussed in Section 3.2.4, site access will be via either Hillview Road or Salisbury Plains Road. The transport route from these transport corridors to the development footprint will be confirmed through the EIS but is expected to comprise vehicle movements from the New England Highway, which will access the project via:

- Option 1: Salisbury Street, Duke Street, East Street and Gostwyck Road before turning onto Hillview Road
- Option 2: Salisbury Street, Duke Street, Thunderbolts Way and Salisbury Plains Road (this option will require a new easement to be established over private land to access the development footprint; however, it is noted that there is a paper road at this location)
- Option 3: Salisbury Street, Duke Street, Thunderbolts Way, Carlon Menzies Road before turning onto Hillview Road.

The potential access corridors are shown on Figure 3.1. The decision on the preferred vehicle access route will depend on outcomes of environmental constraints identification and stakeholder engagement (including with EnergyCo and neighbouring landholders).

Over-size, over-mass (OSOM) vehicles will require access to the project and the preferred route will be subject to more detailed route analysis.

Subject to detailed design, internal access tracks will also be established to connect the project to the public road network. All internal access tracks will be unsealed. The internal tracks will serve both as access for servicing and maintaining project infrastructure as well as fire trails.

6.4.2 Potential impacts

The project will generate traffic during construction related to the movement of construction workers and the delivery of materials, plant and equipment. OSOM vehicles will be required for the transport of oversized infrastructure and project components to the project. Construction traffic generation has the potential to impact on intersection performance and traffic volume capacity on the surrounding network and along key transport routes for the movement of infrastructure from ports to the project.

Operational traffic generation will be minimal with some daily light vehicle movements and heavy vehicle deliveries only as required.

6.4.3 Assessment approach

Engagement with Transport for NSW and Uralla Shire Council will be required to identify any existing road safety concerns and ensure any potential deficiencies are clearly understood and assessed. Proposed new access points from the public road network will be required for project construction access. Ongoing road maintenance requirements and any potential need for localised upgrades to mitigate traffic impacts during construction will also need to be considered. Should upgrades be required, these will form part of the development application and will be detailed in the EIS (including assessment of impacts to biodiversity and Aboriginal cultural heritage). Road upgrade requirements will be determined in consultation with the relevant road authority.

A traffic impact assessment will be carried out to investigate potential impacts associated with the project. The traffic impact assessment will include the following key elements:

- projections of traffic volumes (both light and heavy vehicles) and transport routes during construction and operation
- assessment of the potential traffic impacts of the project on road network function, including intersection performance, site access arrangements, and road safety, including school bus routes and cyclist safety
- assessment of the capacity and condition of the existing road network to accommodate the type and volume of traffic generated by the project (including OSOM vehicles and escorted deliveries) during construction and operation, with any potential cumulative impacts from other projects in the area being taken into account
- provide details of measures to manage potential impacts, including a schedule of required road upgrades, road maintenance contributions, and other traffic control measures, developed in consultation with the relevant road authority.

6.5 Aboriginal cultural heritage

6.5.1 Existing environment

The project investigation area is within the Armidale Plateau subregion of the New England Tablelands Bioregion. This subregion is characterised by an undulating to hilly plateau at an elevation of approximately 1,100 m. The project investigation area generally falls between elevations of 1,000 m and 1,040 m. It has a stepped landscape across Tertiary period basalt flows with broad valleys which steepen to the east at the head of the Great Escarpment Gorges. Local geology is considerably diverse, as the basalt flows not only outcrop frequently, but have also eroded and exposed underlying sedimentary layers. The resulting landscape is a myriad of outcropping materials including basalt, granite, silcrete, chert, jasper, greywacke and ironstone, primarily exposed on eroded landforms such as crests and steep slopes. Regional soil landscape mapping indicates that the project investigation area occurs across two soil landscapes, including Uralla Basalts and Sands and Niangala Plateau and Slopes soil landscapes (OEH 2017).

The project investigation area is within the catchment of the Macleay River which rises to the east of the project investigation area at the confluence of the Gara River, Salisbury Waters and Bakers Creek and flows south-east through a coastal floodplain, where it meets the Pacific Ocean. Key watercourses within, or in close proximity to, the project investigation area are Salisbury Waters (6th order), Cook Station Creek (5th order) and Atchesons Gully (4th order) (Figure 2.1). The presence of these watercourses, including a number of lesser tributaries throughout the project investigation area, indicates the potential for Aboriginal objects to be present.

The project investigation area has been modified by historical land use practices and past disturbances associated with land clearing, manual and machine rock-picking, cropping and intensive livestock grazing. Although the project investigation area has been subject to widespread clearing, there are some mature native trees that have survived (living or dead).

A search of the Aboriginal Heritage Information Management System (AHIMS) has been completed and there are 11 Aboriginal sites recorded in or near the project investigation area (Figure 6.3). The majority of these sites were identified as part of the *New England Solar Farm Aboriginal Cultural Heritage Assessment Report* (EMM 2018a) and include isolated finds and artefact scatters.

6.5.2 Potential impacts

Construction of the project has the potential to impact known and currently unidentified Aboriginal cultural heritage sites. The potential for other archaeological site types and intangible cultural sites to occur within the project investigation area will be established through further archaeological investigation and consultation with Registered Aboriginal Parties (RAPs), which will also provide valuable information on the cultural heritage values of the project investigation area and broader region.

ACEN will seek to avoid impacts to Aboriginal cultural heritage sites wherever possible. Due to the nature of solar farm infrastructure, impacts to Aboriginal cultural heritage sites can often be avoided with careful consideration of project design.

Initial predictive modelling indicates Aboriginal cultural heritage sites are most likely to occur in proximity to current or past waterways (including Salisbury Waters, and Atchesons Gully); avoidance of these features, if possible, could reduce impacts to Aboriginal cultural heritage sites. Any impacts and mitigation and management measures will be defined in the EIS in consultation with the RAPs.

6.5.3 Assessment approach

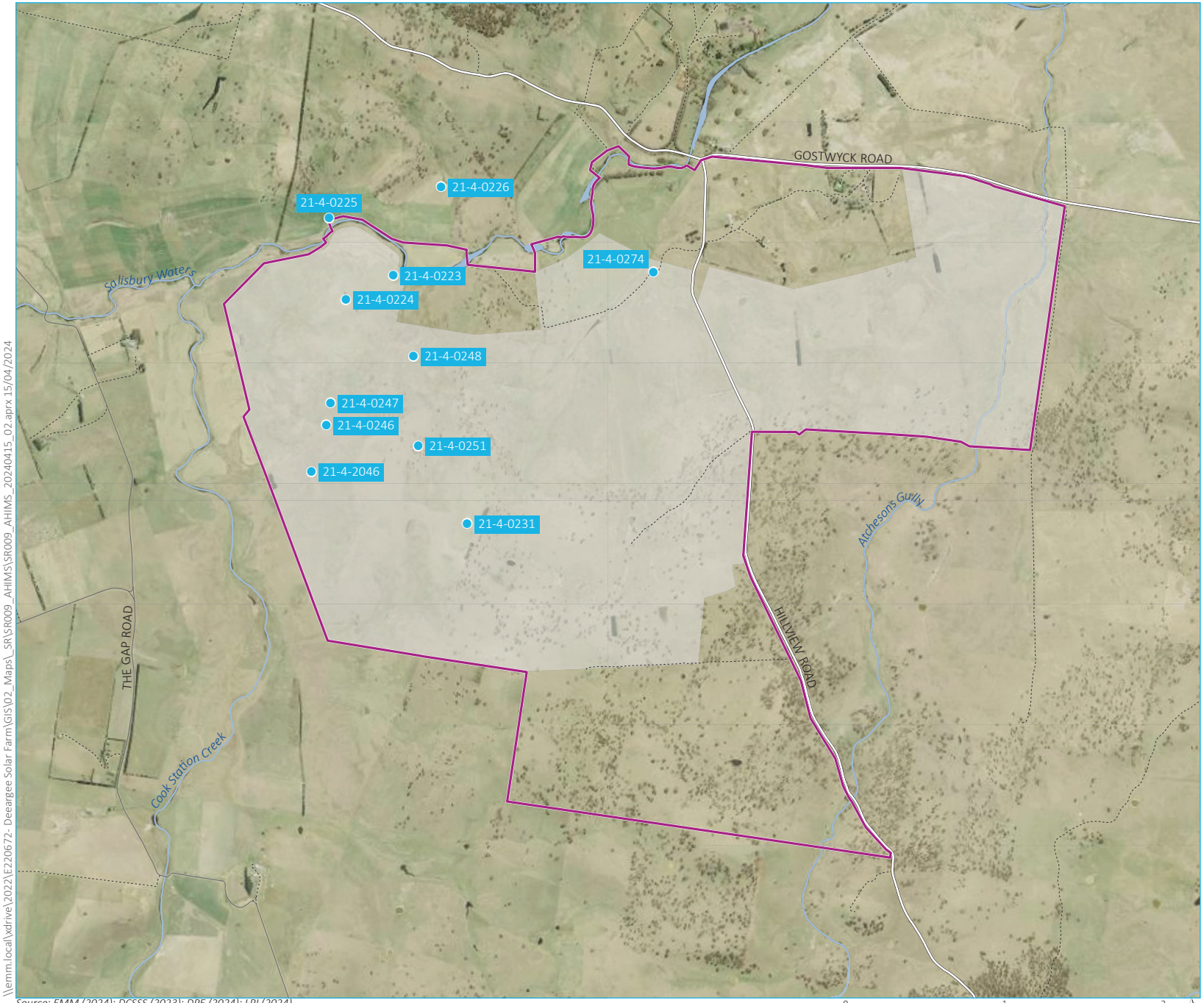
A detailed Aboriginal cultural heritage assessment (ACHA) will be prepared for the project in accordance with relevant regulations and guidelines, including:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011)
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a)
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b).

The ACHA will include consultation with the local Aboriginal community, review of existing information, development of a predictive model, on-site investigations, description of cultural materials and their significance, potential impacts and recommendations for the project usually in the form of mitigation measures.

The ACHA will include the following key components:

- Identification of Aboriginal cultural heritage values relevant to the project investigation area through background research, predictive modelling, consultation with Aboriginal stakeholders and archaeological field investigations. Archaeological survey will be undertaken by archaeologists and representatives of the local Aboriginal community. Potential project constraints identified during the survey will inform potential refinement of the development footprint to minimise impacts to Aboriginal cultural heritage values. Measures will be developed to avoid and mitigate potential impacts to Aboriginal cultural heritage, as required. The findings of the background research and surveys will inform the need for further archaeological assessment (such as test excavation).



KEY

- Project investigation area
- Development footprint
- AHIMS site

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

0 1 2 km

GDA2020 MGA Zone 56

N

Source: EMM (2024); DCSSS (2023); DPE (2024); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR009_AHIMS\SR009_AHIMS_20240415_02.aprx 15/04/2024

Known Aboriginal sites within the project investigation area and surrounds

Deeargee Solar and Battery Project
Scoping Report
Figure 6.3

EMM
creating opportunities

- Assessment of the significance of Aboriginal objects, sites and locations identified in the course of the archaeological investigations and through Aboriginal community consultation.
- Assessment of the impact of the project on identified Aboriginal cultural heritage values.
- Provision of appropriate management measures for potentially impacted Aboriginal cultural heritage values in response to their assessed significance.

6.6 Historic heritage

6.6.1 Existing environment

The project investigation area is in a region that has a rich Aboriginal past and historically was claimed by squatters who raised Merino sheep for both domestic and international markets. The region remains largely pastoral and is serviced by Uralla and Armidale.

Early settlers established runs in the local area. The early historic sizes of the squatting runs have been significantly reduced in some cases, but the economic use remains the same for many. Pastoral technology has been upgraded and older structures have either been updated, fallen into ruin or have been demolished. Later twentieth century cold-climate plantings have added another element that has become characteristic of the New England Tablelands. The result is a palimpsest of pre-colonial and post-colonial uses that are visible in the landscape and exist as archaeological sites and ruins.

The project investigation area encompasses a small part of a much larger area that has cultural significance for its historical use as squatting and then pastoral runs. Field assessments undertaken as part of the *New England Solar Farm Historical Heritage Assessment and Statement of Heritage Impact* (EMM 2018b) confirmed that relics and significant structures exist within the project investigation area and surrounds.

Historical items within the project investigation area and surrounds are shown on Figure 6.4 and include:

- items listed under Schedule 5 of the Uralla LEP:
  - Gostwyck Chapel and Precinct (I10)
  - Deeargee Woolshed (I11)
  - a suspension bridge across Salisbury Waters (I09)
- items identified as part of the *New England Solar Farm Historical Heritage Assessment and Statement of Heritage Impact* (EMM 2018b):
  - remnants of basalt walls (HNE11 and HNE12)
  - Old Gostwyck Platforms (HNE05 and HNE06)
  - Old Gostwyck Woolshed archaeological site (HNE09)
  - remnant stockyards (HNE08)
  - Toongabbie Station archaeological site (HNE07)
  - a brick-making site (HNE10)
  - Gostwyck Hall (HNE38)

- graves (HNE39)
- dwellings (HNE40).

There are no items listed on the World Heritage List, National Heritage List, Commonwealth Heritage List or NSW State Heritage Register within, or in proximity to, the project investigation area.

6.6.2 Potential impacts

Construction of the project has the potential to impact currently unidentified historic heritage sites; however, the level of direct and cumulative impacts cannot be established at this stage in the project.

ACEN will seek to avoid impacts to known historic heritage sites wherever possible. Any impacts and mitigation and management measures will be identified in the EIS.

6.6.3 Assessment approach

To inform the development of the EIS, a historical heritage assessment of built, archaeological and landscape values and a statement of heritage impact (technical report) will be prepared. The assessment will reference the *New England Solar Farm Historical Heritage Assessment and Statement of Heritage Impact* (EMM 2018b) and may include further and more detailed desktop research and consultation as required. An inspection of the project investigation area may also be required, should the additional research suggest the presence of historical sites. The assessment will also consider the potential significance of known historical sites and provide recommendations for their appropriate management.

6.7 Land

6.7.1 Existing environment

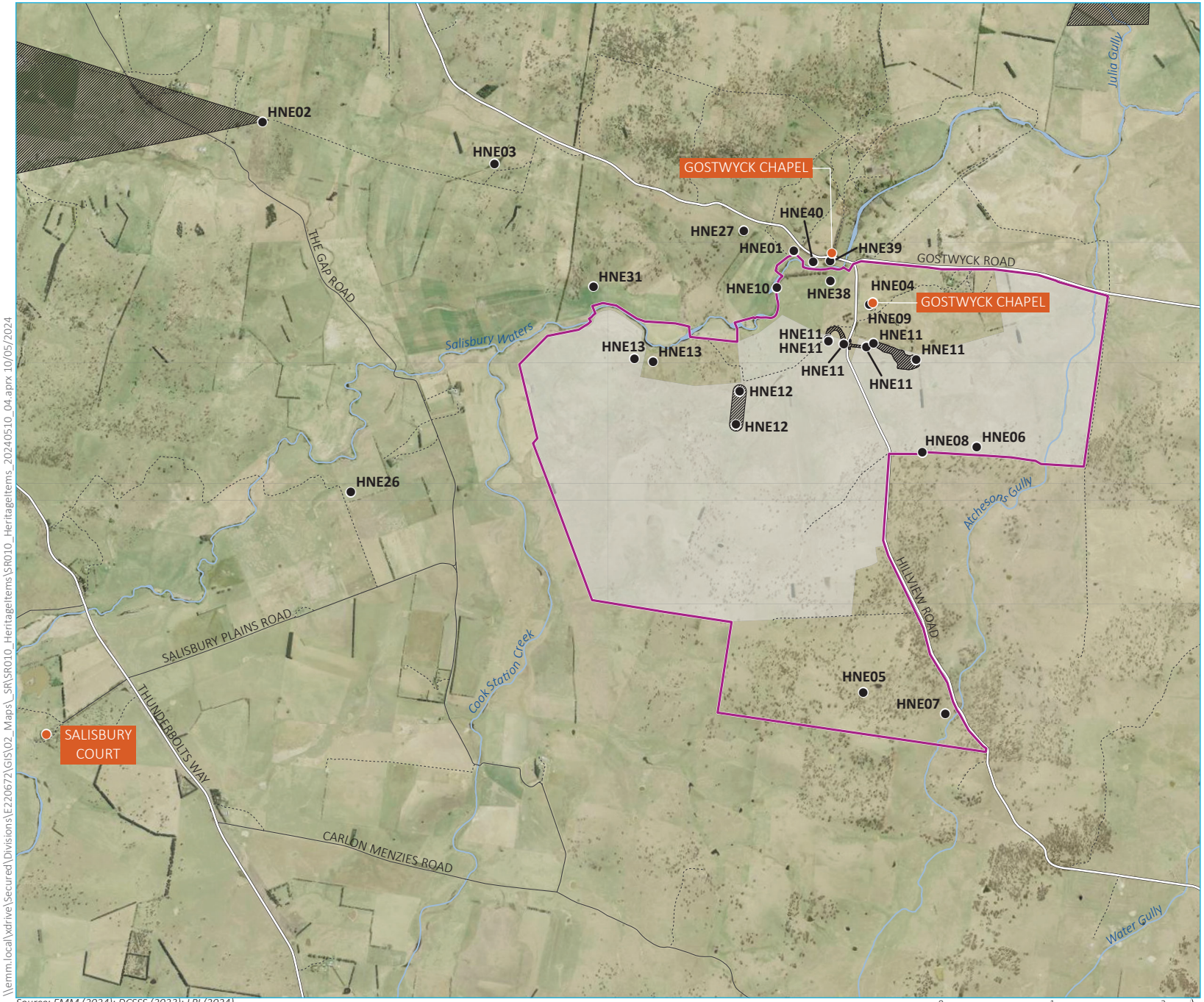
The land in the project investigation area is zoned RU1 Primary Production under the Uralla LEP and is used for agricultural purposes. The project investigation area has been modified by historical land use practices and past disturbances associated with land clearing, cropping and intensive livestock grazing.

The project investigation area represents approximately 0.25% of the total land area within the Uralla Shire LGA. Of the land within the project investigation area, approximately 538 ha is mapped as BSAL (Figure 6.5). This represents approximately 0.02% of the total land area mapped as BSAL within NSW.

Land and soil capability (LSC) classes mapped within the project investigation area (Figure 6.5) are:

- Class 3 (538 ha), which is characterised as high capability land that has moderate limitations and is capable of sustaining high-impact land uses (OEH 2012)
- Class 4 (290 ha), which is characterised as moderate capability land with moderate to high limitations for high impact land uses (OEH 2012)
- Class 6 (132 ha), which is characterised as low capability land with very high limitations for high-impact land uses (OEH 2012).

According to the Australian Soil Classification system, soils within the project investigation area are predominantly mapped as chocolate and red podzolic soils, with euchrozems and black earths also present.



KEY

- Project investigation area
- Development footprint
- Heritage item (Uralla LEP listed)
- Historic heritage survey item
- Historic heritage indicative site boundary

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); LPI (2024)

0 1 2 km

GDA2020 MGA Zone 56

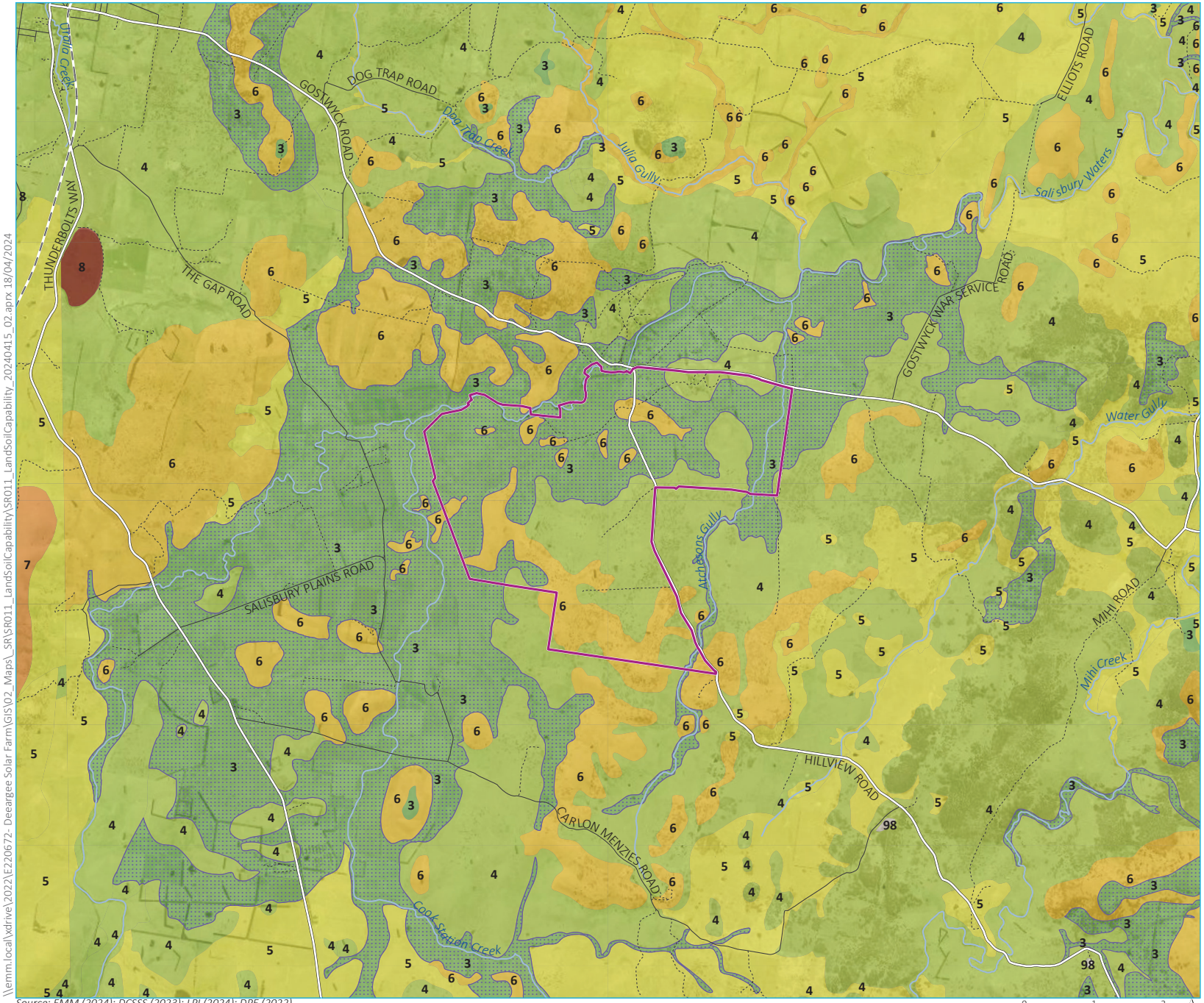
N

\\emm.local\xdrive\Secured\Divisions\E220672\GIS\02_Maps_SR\SR010_HeritageItems\SR010_HeritageItems_20240510_04.aprx 10/05/2024

Listed and previously identified historic heritage items

Deeargee Solar and Battery Project
Scoping Report
Figure 6.4

EMM creating opportunities



\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR011_LandSoilCapability\SR011_LandSoilCapability_20240415_02.aprx 18/04/2024

Source: EMM (2024); DCSSS (2023); LPI (2024); DPE (2022)

Land and soil capability

Deeargee Solar and Battery Project
Scoping Report
Figure 6.5

EMM
creating opportunities

6.7.2 Potential impacts

i Construction

Soil disturbance during construction may result in:

- topsoil and subsoil impacts (e.g. degradation and loss of topsoil, compaction of soil through vehicle movement and poor reinstatement and soil inversion or mixing resulting in changes in constraints such as salinity and sodicity within the soil profile)
- disturbance and form changes affecting natural surface drainage
- erosion and sedimentation, particularly during clearance and soil exposure activities resulting in:
  - on-site impacts (such as erosion of constructed landforms)
  - off-site impacts (such as eutrophication of downstream waters)
- increased dust generation.

These impacts could result in reduction of soil quality that could be deleterious to agricultural productivity and land use after rehabilitation if not suitably managed or mitigated.

Decreasing soil quality or volumes during construction could result in limitations to rehabilitation from loss or degradation of soil materials that are needed to reinstate the soils in a suitable condition.

Any negative impact to soil characteristics presents a risk of harm to the land and soil capability and productivity of the development footprint post-rehabilitation.

ii Operations

Once constructed, the land within the development footprint will not be able to be used for the same intensity of agricultural production; however, there are opportunities to co-locate agricultural land uses, such as sheep grazing, to maintain a level of agricultural productivity. This is currently being successfully implemented at ACEN's New England Solar and Battery Project and the project landholder for Deeargee Solar and Battery Project has expressed their interest in pursuing a shared land use (e.g. sheep grazing within the development footprint) throughout operations.

Inappropriate management of soils during operations could result in negative impacts to soil characteristics, which may impact the land and soil capability and agricultural productivity of the development footprint post-rehabilitation.

6.7.3 Assessment approach

The project will be designed to minimise impacts on agricultural land, where practical. As part of the EIS, an agricultural impact assessment will be undertaken in accordance with the *Large-Scale Solar Energy Guideline* (DPE 2022a). The agricultural impact assessment will identify:

- the agricultural capability and productivity of land within the development footprint
- potential impacts of the project on agricultural land and associated industries
- the ways in which potential impacts may be mitigated.

Land within the development footprint is mapped as LSC Class 3, 4 and 6 (Figure 6.5). Therefore, in accordance with the requirements of the *Large-Scale Solar Energy Guideline* (DPE 2022a), a soil survey is required to verify the LSC class. If verified as LSC Class 3, a Level 3 (detailed) agricultural impact assessment will be completed as part of the EIS. The outcomes of the soil survey will also be used to inform the erosion hazard analysis and recommendations for site decommissioning and rehabilitation.

A land use conflict risk assessment (LUCRA) will be undertaken in accordance with DPI's (2011) *Land Use Conflict Risk Assessment Guideline* and in consultation with neighbouring landholders. The LUCRA will assess the project's potential impacts on neighbouring agricultural operations as well as potential agribusiness opportunities that may be co-located with the project. Should they be required, land management practices will be implemented to avoid or minimise potential impacts on neighbouring agricultural operations.

6.8 Water

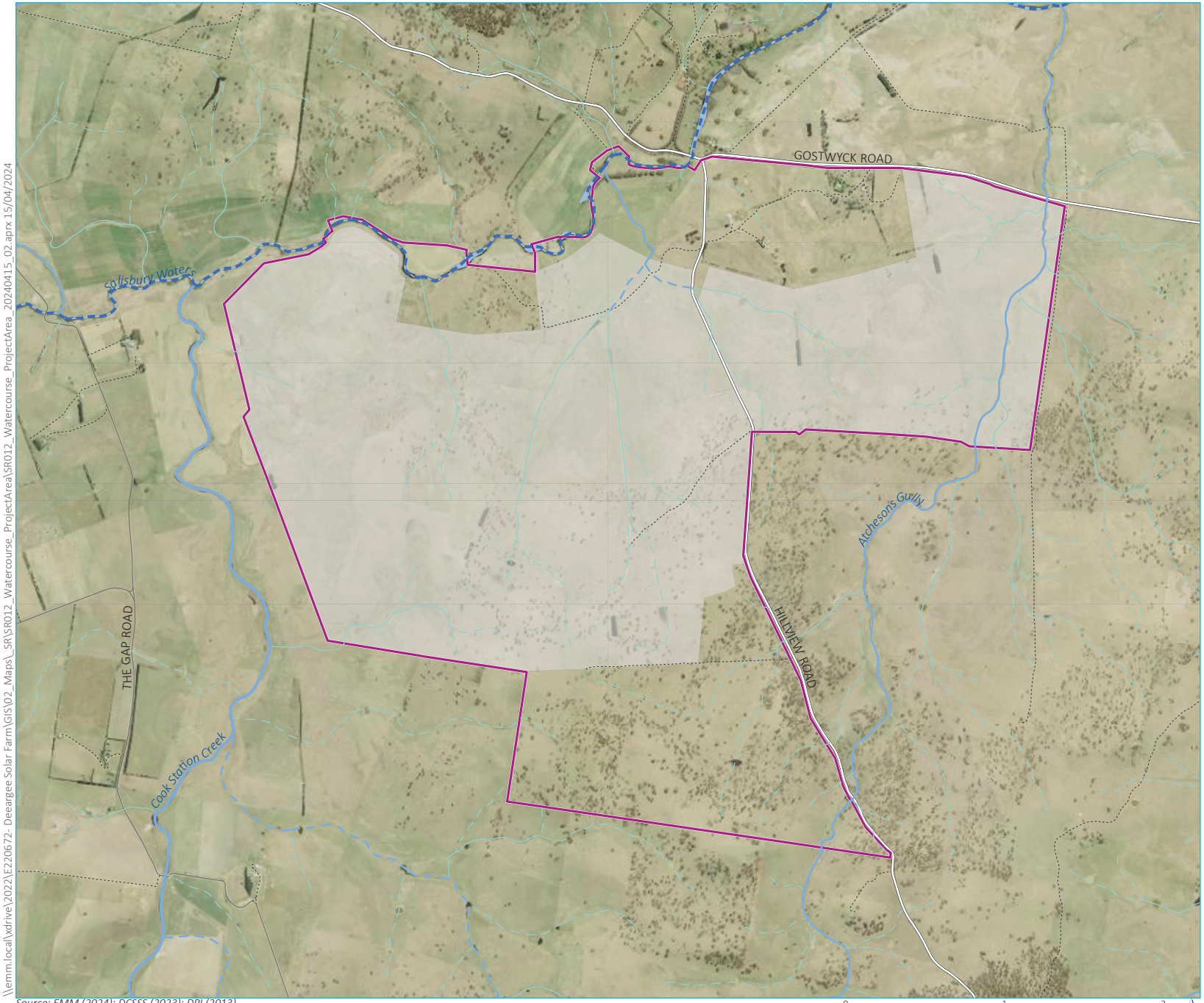
6.8.1 Existing environment

The project is in the upper reaches of the Macleay River catchment, which covers a total area of 11,450 km^2 and includes extensive areas of the northern tablelands. The local hydrologic context relevant to the project investigation area is shown on Figure 6.6. Named watercourses within the project investigation area and surrounds include Salisbury Waters (6th order), Cook Station Creek (5th order) and Atchesons Gully (4th order). Most watercourses within the project investigation area are ephemeral. With the exception of part of Salisbury Waters and Atchesons Gully, the ephemeral waterways within the project investigation area are lower order streams and, in most cases, do not have a discernible channel, lack aquatic vegetation and are dominated by grass species prevalent across the project investigation area. There are several existing farm dams used primarily for stock watering within the project investigation area. There are no Ramsar wetlands or other significant wetlands within or downstream of the development footprint.

The project investigation area is outside of the flood planning area as mapped under the Uralla LEP. Flood modelling was undertaken as part of the *New England Solar Farm Surface Water Assessment* (EMM 2018c) to inform project design and the refinement process for the New England Solar and Battery Project. The 1% annual exceedance probability (AEP) event (i.e. 1 in 100 year flood) was modelled and the following key observations were made, which are relevant to the project:

- flooding generally follows the alignment of watercourses, with no substantial overbank flooding or breakouts evident
- floodways and areas of higher flow velocity and flood hazard are typically confined within watercourses.

As part of the EIS, the flood model will be updated and opportunities to minimise potential interactions with floodwaters and to avoid areas subject to inundation or high flood hazard will be identified.



KEY

- Project investigation area
- Development footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 4th order
- 5th order
- 6th order

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); DPI (2013)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR012_Watercourse_ProjectArea\SR012_Watercourse_ProjectArea_20240415_02.aprx 15/04/2024

Watercourses within and in proximity to the project investigation area

Deeargee Solar and Battery Project
Scoping Report
Figure 6.6

EMM
creating opportunities

6.8.2 Potential impacts

The construction of the project has the potential to result in the following impacts to water resources in the absence of suitable controls:

- ground disturbance during bulk earthworks and other site activities could lead to exposure of soils and potential erosion and mobilisation of sediment into receiving watercourses
- contamination of surface waters or groundwater as a result of accidental spillage of materials such as fuel, lubricants, herbicides and other chemicals used to support construction activities
- disturbance of watercourses (e.g. through construction of creek crossings) and associated riparian zones to support construction activities (including clearing, bulk earthworks and civil works, installation of infrastructure and site establishment)
- partial blockage or redirection of floodwaters and downstream impacts as a result of poorly considered construction activities
- demand for water during construction.

Operation has the potential to result in the following impacts to water resources in the absence of suitable controls:

- demand for water for land management purposes
- potential ongoing erosion of soils and mobilisation of sediment into receiving watercourses
- contamination of surface water or groundwater as a result of accidental spillage of materials such as fuel, lubricants, herbicides and other chemicals used to support site activities, or through poor site and vegetation management practices
- partial blockage or redirection of floodwaters and downstream impacts as a result of poorly considered permanent facilities.

Specific design considerations and mitigation measures may be recommended to minimise potential impacts within and along drainage lines. Roads and services that require watercourse crossings will be designed and constructed in accordance with relevant regulations and best practice design and construction methods.

The project is not likely to impact groundwater during construction, operation, or decommissioning due to the limited amount of subsurface disturbance activities required during the installation and decommissioning of project infrastructure.

6.8.3 Assessment approach

A water resources assessment will be prepared and will include a review of the existing water environment, an assessment of potential impacts on water resources and a description of any proposed mitigation and management measures. The water resources assessment will include:

- complete site characterisation including mapping to effectively characterise surface water features, groundwater features and relevant water users
- the likely impacts of the project (including flooding) on surface water and groundwater resources, drainage channels, wetlands, riparian land, farm dams, groundwater dependent ecosystems and acid sulfate soils, related infrastructure, adjacent licensed water users and basic landholder rights, and measures proposed to monitor, reduce and mitigate these impacts

- a qualitative review and assessment of the likely risks and impacts of the project on flooding and floodplain areas using available flood data and mapping
- a review of the relevant regulatory requirements (e.g. Water Sharing Plans) of relevance to the catchment and groundwater sources in which the project is located
- consideration of water requirements and supply arrangements for construction and operation (including any potential impacts on local surface water and groundwater users)
- erosion and sediment control measures that will be implemented to mitigate any impacts in accordance with *Managing Urban Stormwater: Soils & Construction* (Landcom 2004).

6.9 Noise and vibration

6.9.1 Existing environment

Land use within the project investigation area and surrounds is predominantly agricultural. Given the project's rural setting, background noise at nearby sensitive receptors is likely to be low and characterised by agricultural equipment and machinery associated with agricultural production activities, vehicle movements along local roads and natural sounds (e.g. livestock, birds, insects, etc).

The area surrounding the project investigation area is sparsely populated with 18 non-project related residences within 4 km of the project investigation area, including 1 within 500 m (R6 on Figure 6.2).

6.9.2 Potential impacts

Noise impacts from the project will mostly be associated with construction activities and include noise generated by preparatory earthworks, delivery and assembly of the solar panel infrastructure (including pile driving), construction of the BESS, on-site substation and grid connection works and operation of light and heavy vehicles.

Operational noise impacts will include the operation of the solar tracking system, on-site substation and BESS. The location of noise-generating infrastructure within the development footprint will be determined with consideration to noise impacts on surrounding residences.

6.9.3 Assessment approach

A noise and vibration impact assessment will be prepared and will consider relevant noise impacts to local receptors within the vicinity of the project and cumulative impacts with surrounding developments. The assessment will include:

- identification of noise sources and relevant noise outputs of construction equipment and infrastructure proposed by the project
- noise modelling and assessment, taking into consideration the following:
  - predictive modelling
  - noise mitigation strategies
  - potential construction activity, road traffic noise and operational noise impacts.

The assessment will be prepared in accordance with the:

- *Interim Construction Noise Guideline* (DECC 2009)
- *Noise Policy for Industry* (EPA 2017)
- *Road Noise Policy* (DECCW 2011)
- *Assessing Vibration: A Technical Guideline* (DEC 2006).

A road traffic noise assessment will also be included to assess noise impacts associated with project-related vehicle movements along the local road network during the construction phase of the project.

The potential for cumulative noise impacts with New England REZ transmission infrastructure will be considered as the project design evolves and will be assessed in the EIS.

6.10 Hazards and risks

Potential hazardous scenarios and risks associated with the project include bushfires, dangerous goods and hazardous substances, and exposure to electromagnetic fields. Accordingly, the EIS will include an assessment of potential hazards and risks including the following:

- Bushfire risks, which will be assessed against *Planning for Bush Fire Protection* (NSW Rural Fire Service 2019). This will include an assessment of risks that may contribute to ignition and/or propagation of a bushfire within the project investigation area. An assessment that demonstrates the area designated for the BESS is sufficient such that the separation distances between the BESS and on-site or off-site receptors and between BESS sub-units (containers, modules, etc) prevent fire propagation will be prepared.
- A Preliminary Hazard Analysis will be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis* (DoP 2011a) and *Multi-Level Risk Assessment* (DoP 2011b).
- Electromagnetic fields from proposed electrical infrastructure, which will be assessed against the International Commission on Non-Ionizing Radiation Protection *Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields* (1998).

There is no established evidence that exposure to electromagnetic fields generated by powerlines, substations, and other electrical sources cause adverse health effects (ARPANSA 2018). Generally, at distances of greater than 50 m from a high voltage powerline, electromagnetic field levels are at levels considered typical. Electromagnetic field levels at distances of 5 m–10 m away from substations are considered to be consistent with background levels in a typical home (ARPANSA 2022).

Electromagnetic fields that are anticipated to be generated by the project are not expected to exceed guidelines for public exposure and will not cause adverse impacts for human health. The electromagnetic field levels of the project including solar farm, BESS, on-site substation and grid connection will be assessed as part of the EIS but are not anticipated to increase electromagnetic field levels above existing background environmental levels.

6.11 Waste

Waste produced by the project will be managed in accordance with the objectives of the NSW *Waste Avoidance and Resource Recovery Act 2001* including the waste hierarchy, in order of preference:

- avoid and reduce waste
- recover resources
- dispose of waste.

The majority of the waste associated with the project will be produced in the construction and decommissioning phases. There will be minimal waste generated in the operational phase. All waste produced by the project will be classified, stored and handled in accordance with the *Waste classification guidelines – part 1: classifying waste* (EPA 2014).

Facilities to accept waste from the project will depend on the volume generated and how it is segregated. Investigations will be required to identify suitable waste and resource recovery facilities further from the project, in consultation with the operators of these facilities. Construction waste may need to be managed through commercial agreements with contractors during construction of the project, a licensed waste management company and relevant local councils.

The EIS will include a conceptual waste management plan. A key objective of this plan will be to ensure that any use of local waste management facilities does not disadvantage local businesses or the local community by exhausting available capacity at these facilities. The plan will be updated during detailed design to form the project's waste management plan, which will be reviewed throughout the life of the project in consultation with DPHI and Uralla Shire Council.

6.12 Cumulative impacts

The project will contribute to the overall development of the New England REZ. Other proposed, approved, under construction and operational renewable energy developments within and in the vicinity of the New England REZ and the project are summarised in Table 2.1.

As shown in Figure 6.7, there are multiple renewable energy generation and transmission projects proposed in the vicinity of the project investigation area. It is anticipated that there will be additional renewable energy generation, storage and transmission projects proposed in the vicinity of the project that are not publicly known at the time of preparing this report.

The project may generate cumulative impacts in conjunction with surrounding projects during both construction and operation. These impacts may include cumulative traffic, construction noise, visual, social (including workforce and accommodation capacity), and biodiversity impacts. However, there may also be a cumulative benefit to local communities from the project and other developments in the region through the generation of jobs during construction and ongoing operation, particularly under the New England REZ, and contribution to local economies associated with the purchase of local goods and services.

The EIS will carry out a cumulative assessment in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE 2021f). The following matters will require consideration:

- visual amenity
- biodiversity
- Aboriginal and historic heritage
- traffic
- social
- land (including consideration of agricultural productivity)
- noise and vibration
- waste.

Further consideration of potential cumulative impacts for projects within 50 km of the project investigation area and the proposed assessment approach is provided in Table 6.4.

Table 6.4 Cumulative impact assessment scoping summary table

Project	Distance to project	Project status	Indicative timing / overlap	Potential cumulative impacts
New England Solar and Battery Project	6 km	Stage 1 is operational Stage 2 is under construction	Operations overlap	Visual amenity – Standard assessment – further assessment required to determine cumulative visual amenity impacts. Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Noise and vibration – Standard assessment – cumulative operational noise impacts will be assessed. Social – No potential overlap in impacts – once operational, the New England Solar and Battery Project's impacts on the local population, accommodation and goods and services will be negligible. Traffic – No potential overlap in impacts – cumulative impacts on local and regional road network will be negligible as the New England Solar and Battery Project is expected to be in operations with minimal daily vehicle movements.
Thunderbolt Wind Farm	15 km	Proposed – under assessment	Potential construction overlap Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Visual amenity – Standard assessment – further assessment required to determine cumulative visual amenity impacts; however, considered unlikely due to separation distance. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Noise and vibration – Standard assessment – cumulative construction, operational and road traffic noise will require assessment.
Eathorpe BESS	20 km	Proposed – EIS in preparation	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.

Table 6.4 Cumulative impact assessment scoping summary table

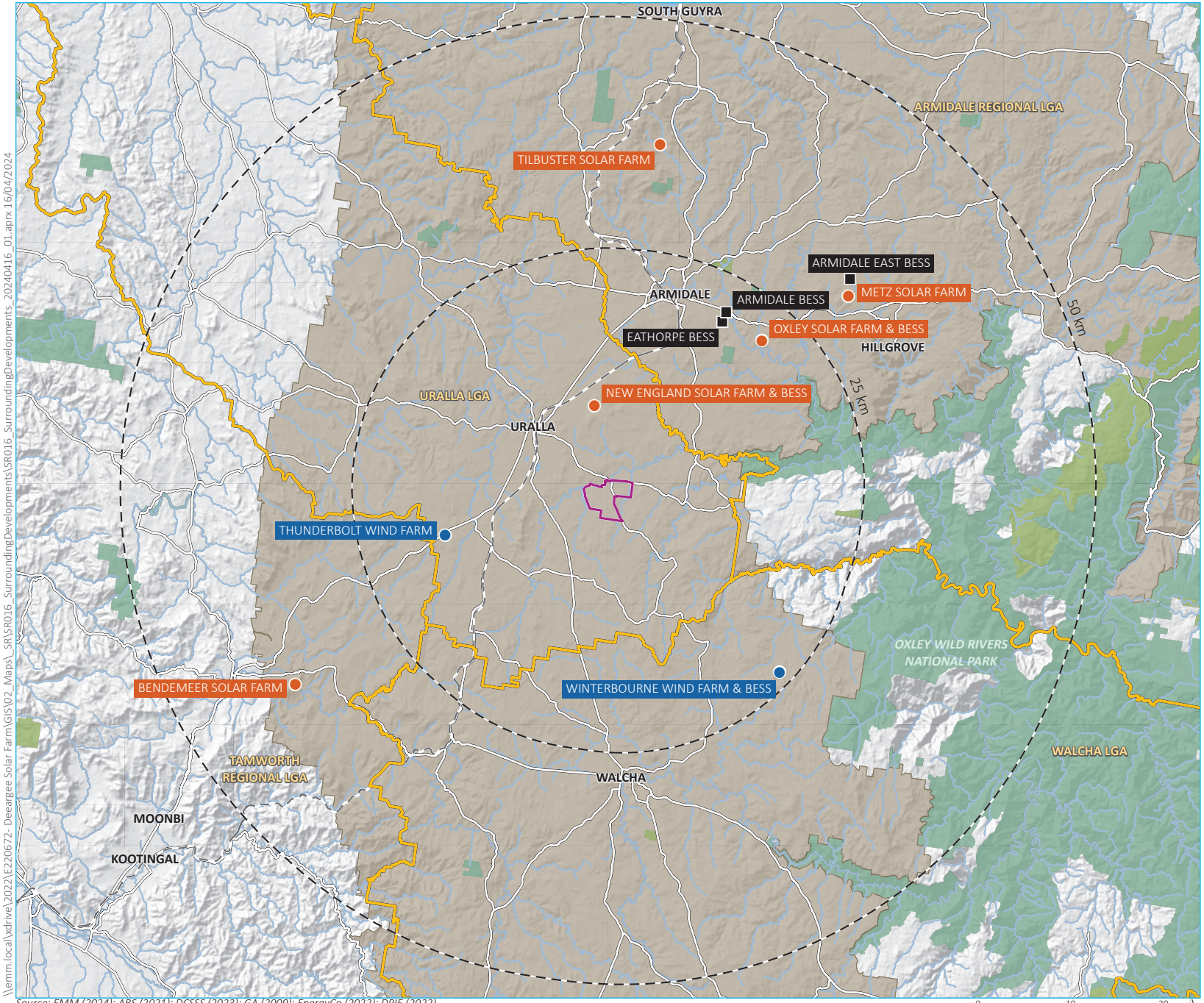
Project	Distance to project	Project status	Indicative timing / overlap	Potential cumulative impacts
Armidale BESS	20 km	Proposed – response to submissions	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.
Armidale East BESS	21 km	Proposed – EIS in preparation	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.
Oxley Solar Farm and BESS	21 km	Approved	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.

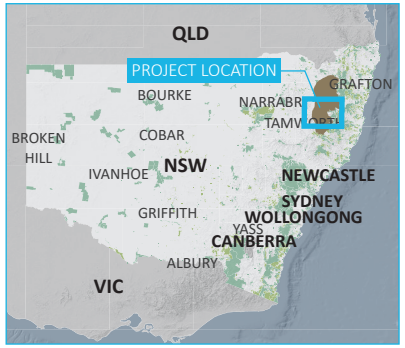
Table 6.4 Cumulative impact assessment scoping summary table

Project	Distance to project	Project status	Indicative timing / overlap	Potential cumulative impacts
Winterbourne Wind and BESS	25 km	Proposed – response to submissions	Construction and operations overlap	Visual amenity – Standard assessment – further assessment required to determine cumulative visual amenity impacts; however, considered unlikely due to separation distance. Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on the local and regional road network (including New England Highway and Thunderbolts Way) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Noise and vibration – no potential overlap in impacts.
Tilbuster Solar Farm	30 km	Approved	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.
Metz Solar Farm	30 km	Operational	Operations only	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Social – No potential overlap in impacts. Traffic – No potential overlap in impacts. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.

Table 6.4 Cumulative impact assessment scoping summary table

Project	Distance to project	Project status	Indicative timing / overlap	Potential cumulative impacts
Bendemeer Solar Farm	40 km	Proposed – response to submissions	No construction overlap anticipated Operations overlap	Biodiversity – Standard assessment – further assessment required to determine cumulative biodiversity impacts. Land – Standard assessment – cumulative impacts on regional agricultural productivity will be assessed. Aboriginal and historic heritage – Standard assessment of impacts on Aboriginal and historic cultural landscapes. Traffic – Standard assessment – cumulative impacts on regional road network (New England Highway) will require assessment. Social – Standard assessment – cumulative impacts on local population, accommodation and goods and services will require assessment. Visual amenity – no potential overlap in impacts. Noise and vibration – no potential overlap in impacts.





KEY

- Project investigation area
- New England REZ

Renewable development

- BESS
- Solar
- Wind

Existing environment

- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009); EnergyCo (2022); DPIE (2022)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR016_SurroundingDevelopments\SR016_SurroundingDevelopments_20240416_01.aprx 16/04/2024

Approved and proposed projects within 50 km of the project investigation area

Deeargee Solar and Battery Project
Scoping Report
Figure 6.7

EMM
creating opportunities

6.13 Matter requiring no further assessment

Consideration of matters listed in Appendix B of the Scoping Report Guidelines (DPIE 2021a) that do not require further assessment in the EIS are listed in Table 6.5.

Table 6.5 Matter requiring no further assessment in the EIS

Matters	Relevance
Access – rail, port and airport facilities	The project investigation area does not contain rail, port and airport facilities. No interactions with such facilities are proposed as part of the project.
Air quality	The project will have a low impact on air quality. During construction and operation, mitigation measures such as water carts will be used during land preparation and revegetation of disturbed areas.
Amenity – odour	The project will not generate any odorous emissions.
Built environment	The project will have no impacts on the built environment.
Biodiversity – conservation areas	There are no conservation areas within the project investigation area.
Hazards and risks – biosecurity	The project will have low risk to biosecurity. Potential introduction of weeds to or from the project investigation area will be limited to vehicle movements. These risks can be mitigated through the implementation of standard management measures.
Hazards and risks – dams safety	Existing farm dams within the project investigation area will not pose a safety risk.
Hazards and risks – coastal hazards	The project investigation area is not within a coastal zone.
Hazards and risks – environmental hazards	Environmental hazards relevant to the project will be incorporated in other assessments.
Hazards and risks – groundwater contamination	The project is unlikely to contaminate groundwater. Management of chemical storage to prevent potential ground contamination that could then migrate to groundwater sources will be considered in the EIS.
Hazards and risks – land movement	The project investigation area does not contain land mapped as land slide risk. Erosion risks will be considered in the EIS.
Heritage – natural	The project investigation area does not contain any areas of natural heritage significance.
Land – stability	The project investigation area does not contain land mapped as land slide risk. Erosion risks will be considered in the EIS.
Land – soil chemistry	The project will not involve any processes that alter soil chemistry.
Land – topography	The project will not significantly alter the topography within the project investigation area.
Social – decision-making systems	The project will be in accordance with relevant decision-making systems but has no impact on those systems.

Abbreviations

Item	Definition
ABS	Australian Bureau of Statistics
AC	alternating current
ACEN	ACEN Australia Pty Ltd
ACHA	Aboriginal cultural heritage assessment
AEMO	Australian Energy Market Operator
AEP	Annual exceedance probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
BAM	Biodiversity assessment method
BDAR	Biodiversity development assessment report
BESS	Battery energy storage system
Biosis	Biosis Pty Ltd
BOS	Biodiversity offset scheme
BSAL	Biophysical strategic agricultural land
CEP	Community Engagement Plan
DC	Direct current
DNG	Derived native grassland
DPI	NSW Department of Primary Industries
DPHI	NSW Department of Planning. Housing and Infrastructure
EIS	Environmental impact statement
EMM	EMM Consulting Pty Limited
EnergyCo	Energy Corporation of NSW
EPA	NSW Environment Protection Authority
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
GHG	Greenhouse gas
GW	Gigawatts
ha	Hectares
HVAC	Heating ventilation air conditioning
ISP	Integrated System Plan
km	Kilometres
kV	Kilovolt

Item	Definition
LCA	Land category assessment
LEP	Local Environmental Plan
LGA	Local government area
LSC	Land and soil capability class
LUCRA	Land use conflict risk assessment
LVIA	Landscape visual impact assessment
MNES	Matters of national environmental significance
MW	Megawatts
MV	Medium voltage
NEM	National Energy Market
NSW	New South Wales
O&M	Operations and maintenance
OSOM	Over size, over mass
PCT	Plant community type
PCU	Power conversion units
PMST	Commonwealth Protected Matters Search Tool
PV	Photovoltaic
PVIA	Preliminary visual impact assessment
RAPs	Registered Aboriginal Parties
REZ	Renewable Energy Zone
SA	Statistical area
SAII	Serious and irreversible impact
SCADA	Supervisory control and data acquisition
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social impact assessment
SSD	State significant development
TEC	Threatened ecological communities

References

Australian Bureau of Statistics 2021, *Census of Population and Housing: General Community Profiles. data set*

Australian Energy Market Operator (AEMO) 2022, *Integrated System Plan*, June 2022

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

- 2018, *Radiation sources*, viewed December 2023 https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/electricity
- 2022, *Electricity and health*, viewed December 2023, https://www.arpansa.gov.au/understandingradiation/radiation-sources/more-radiation-sources/electricity

Clean Energy Regulator 2021, *Large-scale Renewable Energy Target market data*, January 2021

Department of Environment and Consultation (DEC) 2006, *Assessing Vibration: A Technical Guideline*, February 2006

Department of Environment and Climate Change (DECC) 2009, *Interim Construction Noise Guideline*, July 2009

Department of Environment, Climate Change and Water (DECCW) 2010a, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, August 2010.

- 2010b, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, September 2010.
- 2011 *Road Noise Policy*, March 2011.

Department of Climate Change, Energy, the Environment and Water 2021, *Long-Term Emission Reduction Plan*, 29 October 2021.

- 2023, *Protected Matters Search Tool*, https://www.environment.gov.au/epbc/protected-matters-search-tool.

Department of Planning (DoP) 2011a, *Hazardous Industry Planning Advisory Paper No 6 – Guideline for Hazard Analysis.*

- 2011b, *Multi-Level Risk Assessment.*

Department of Planning, Industry and Environment (DPIE) 2019, *NSW Electricity Strategy*.

- 2020a, *Biodiversity Assessment Method.*
- 2020b, *Net Zero Plan Stage 1 2020–2030.*
- 2020c, *NSW Electricity Infrastructure Investment Roadmap.*
- 2020d, *NSW Energy Security Target and Safeguard.*
- 2021a, *State Significant Development Guidelines – Preparing a Scoping Report.*

- 2021b, *State Significant Development - Preparing an Environmental Impact Statement.*
- 2021c, *Undertaking Engagement Guidelines for State Significant Project*s.
- 2021d, *Social Impact Assessment Guideline for State Significant Projects.*
- 2021e, *Technical Supplement Social Impact Assessment Guideline for State Significant Projects.*
- 2021f, *Cumulative Impact Assessment Guidelines for State Significant Projects.*

Department of Planning and Environment (DPE) 2017, *New England North West Regional Plan 2036*, August 2017.

- 2022a, *Large-scale Solar Energy Guideline for State Significant Development.*
- 2022b, *Technical Supplement – Landscape and Visual Impact Assessment.*
- 2023, *BioNet the website for the Atlas of NSW Wildlife*, Department of Planning and Environment. Sydney, NSW, https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/web-services.

Department of Planning and Industry (DPI) 2011, *Land Use Conflict Risk Assessment Guideline.*

Environmental Projection Authority (EPA) 2014, *Waste Classification Guidelines – Part 1: Classifying Waste.*

- 2017, Noise Policy for Industry.

EMM 2018a, *New England Solar Farm Aboriginal Cultural Heritage Assessment Report,* November 2018.

- 2018b, *New England Solar Farm Historical Heritage Assessment and Statement of Heritage Impact,* November 2018.
- 2018c, *New England Solar Farm Surface Water Assessment*, November 2018.
- 2019, *New England Solar Farm Environmental Impact Statement*, February 2019.

Energy Corporation of NSW (EnergyCo) 2023. *NSW Network Infrastructure Strategy*, May 2023.

International Commission on Non-Ionizing Radiation Protection 1998, *Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields.*

Landcom 2004, *Managing Urban Stormwater: Soils & Construction.*

Office of Energy and Climate Change (OECC) 2022, *First Nations Guidelines.*

Office of Environment and Heritage (OEH) 2002, *NSW Landscapes* (Mitchell 2002), January 2017.

- 2011, *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW.*
- 2012, *The Land and Soil Capability Assessment Scheme.*

NSW Rural Fire Protection Service 2019, *Planning for Bush Fire Protection.*

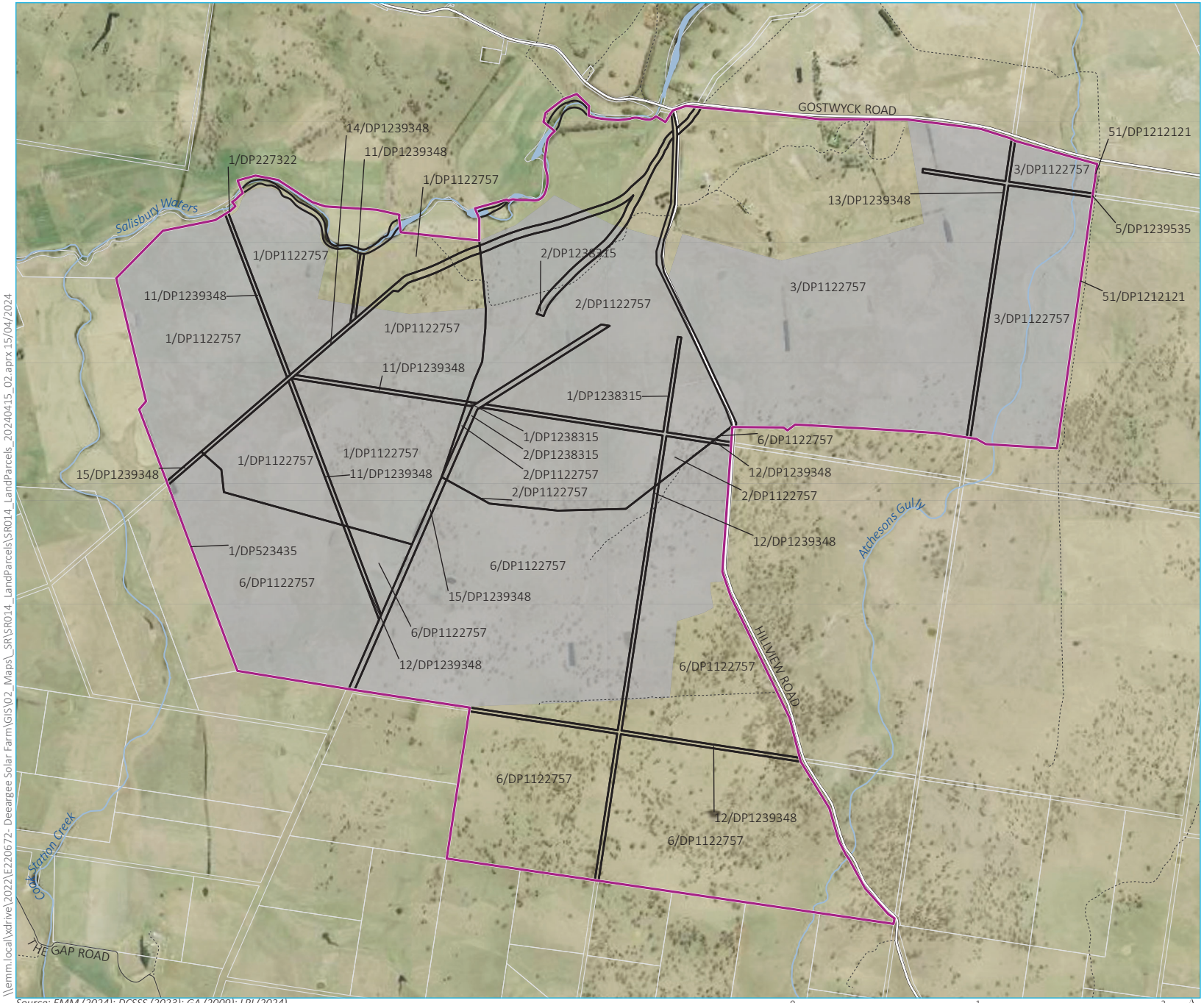
Uralla Shire Council 2021, *Uralla Shire Local Strategic Planning Statement*, June 2021.

Appendix A
Schedule of land

EMM
creating opportunities

Table A.1 Schedule of land

Lot	DP
1	DP1122757
2	DP1122757
3	DP1122757
6	DP1122757
1	DP1238315
2	DP1238315
11	DP1239348
12	DP1239348
13	DP1239348
14	DP1239348
15	DP1238348



KEY

- Project investigation area
- Development footprint
- Subject lot

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody
- Cadastral lot

Source: EMM (2024); DCSSS (2023); GA (2009); LPI (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SR\SR014_LandParcels\SR014_LandParcels_20240415_02.aprx 15/04/2024

Land parcels

Deeargee Solar and Battery Project
Appendix Scoping Report
Figure A1.1

EMM
creating opportunities

Appendix B
Scoping summary table

EMM
creating opportunities

B.1 Scoping summary table

Table B.1 Scoping summary table

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
Detailed	Biodiversity	Yes	General	• *Biodiversity Assessment Method* (DPIE 2020a) • *Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (Commonwealth of Australia 2013) • Commonwealth Department of the Environment – *Survey Guidelines for Nationally Threatened Species* (various)	Section 6.1
	Amenity – Visual	Yes	Specific	• *Large-Scale Solar Energy Guideline* (DPE 2022a) • *Technical Supplement – Landscape and Visual Impact Assessment* (DPE 2022b)	Section 6.2
	Land	Yes	General	• *Large-Scale Solar Energy Guideline* (DPE 2022a) • *Land Use Conflict Risk Assessment Guideline* (DPI 2011) • *Managing Land Contamination: Planning Guidelines State Environmental Planning Policy No 55 Remediation of land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998)	Section 6.7
	Waste	Yes	General	• *Waste Classification Guidelines – Part 1: Classifying Waste (EPA 2014).*	Section 6.11
Standard	Social and economic	Yes	Specific	• *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021d)	Section 6.3
	Traffic	Yes	Specific	• *Guide to Traffic Management – Part 3 Traffic Studies and Analysis* (Austroads 2013)	Section 6.4
	Heritage – Aboriginal	Yes	Specific	• *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) • *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a) • *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b)	Section 6.5

Table B.1 Scoping summary table

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant policies and guidelines	Scoping report reference
	Heritage – Historical	Yes	General	• *Historical Archaeology Code of Practice* (Heritage Council 2006)	Section 6.6
	Water	No	General	• *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom 2004) • *Managing Urban Stormwater: Soils and Construction Volume 2* (Department of Environment and Climate Change 2008) • *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC/ARMCANZ 2000) • *Guidelines for instream works on waterfront land* (NOW 2012) • *Guidelines for riparian corridors on waterfront land* (NOW 2012) • *Guidelines for watercourse crossings on waterfront land* (NOW 2012)	Section 6.8
	Amenity – Noise and vibration	Yes	General	• *NSW Interim Construction Noise Guideline* (DECC 2009) • *NSW Noise Policy for Industry* (EPA 2017) • *NSW Road Noise Policy* (DECCW 2011) • *Assessing Vibration: A Technical Guideline* (DECC 2006)	Section 6.9
	Hazards and risks	No	Specific	• *Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis* (DoP 2011a) • *Multi-Level Risk Assessment* (DoP 2011b)	Section 6.10

Appendix C
Preliminary visual impact assessment

EMM
creating opportunities

Deeargee Solar and Battery Project

Preliminary Visual Impact Assessment

Prepared for ACEN Australia Pty Ltd

April 2024

Deeargee Solar and Battery Project

Preliminary Visual Impact Assessment

ACEN Australia Pty Ltd

E220672 RP4

April 2024

Version	Date	Prepared by	Reviewed by	Comments
V1	8/12/2023	Tadd Andersen	David Richards	Draft for ACEN review
V2	07/03/2024	Tadd Andersen	Natalie Devillers	Revised draft
V3	19/04/2024	Tadd Andersen	David Richards	Final

Approved by

David Richards
Associate Environmental Scientist
19 April 2024

Level 3 175 Scott Street
Newcastle NSW 2300

TABLE OF CONTENTS

Tables

Figures

Photographs

1 Introduction

ACEN Australia Pty Ltd (ACEN) proposes to develop Deeargee Solar and Battery Project, a large-scale grid connected solar and battery energy storage system (BESS) along with associated infrastructure approximately 12 kilometres (km) south-east of Uralla in the Uralla Shire local government area (LGA) (the project) (Figure 1.1).

The project is within the New England Renewable Energy Zone (REZ), which has been formally declared by the NSW Minister for Energy under Section 19(1) of the NSW *Electricity Infrastructure Investment Act 2020*. The New England region of NSW has been selected by the NSW Government for the development of the New England REZ due to its significant natural energy resources and has an intended network capacity of 8 gigawatts (GW).

This preliminary visual impact assessment (PVIA) has been prepared in accordance with the *Large-Scale Solar Energy Guideline* (DPE 2022) and *Technical Supplement – Landscape and Visual Impact Assessment* (DPE 2022) and identifies locations around the project that have the potential for visual impacts.

1.1 Project overview

The project involves the development, construction and operation of a solar photovoltaic (PV) electricity generation facility and BESS, which consists of PV modules, batteries, inverters, transformers and associated infrastructure. The project is expected to have a generation capacity of up to 320 megawatts (MW) and will be constructed on land currently used for grazing and cropping. The project will connect to the grid via new infrastructure proposed as part of the New England REZ.

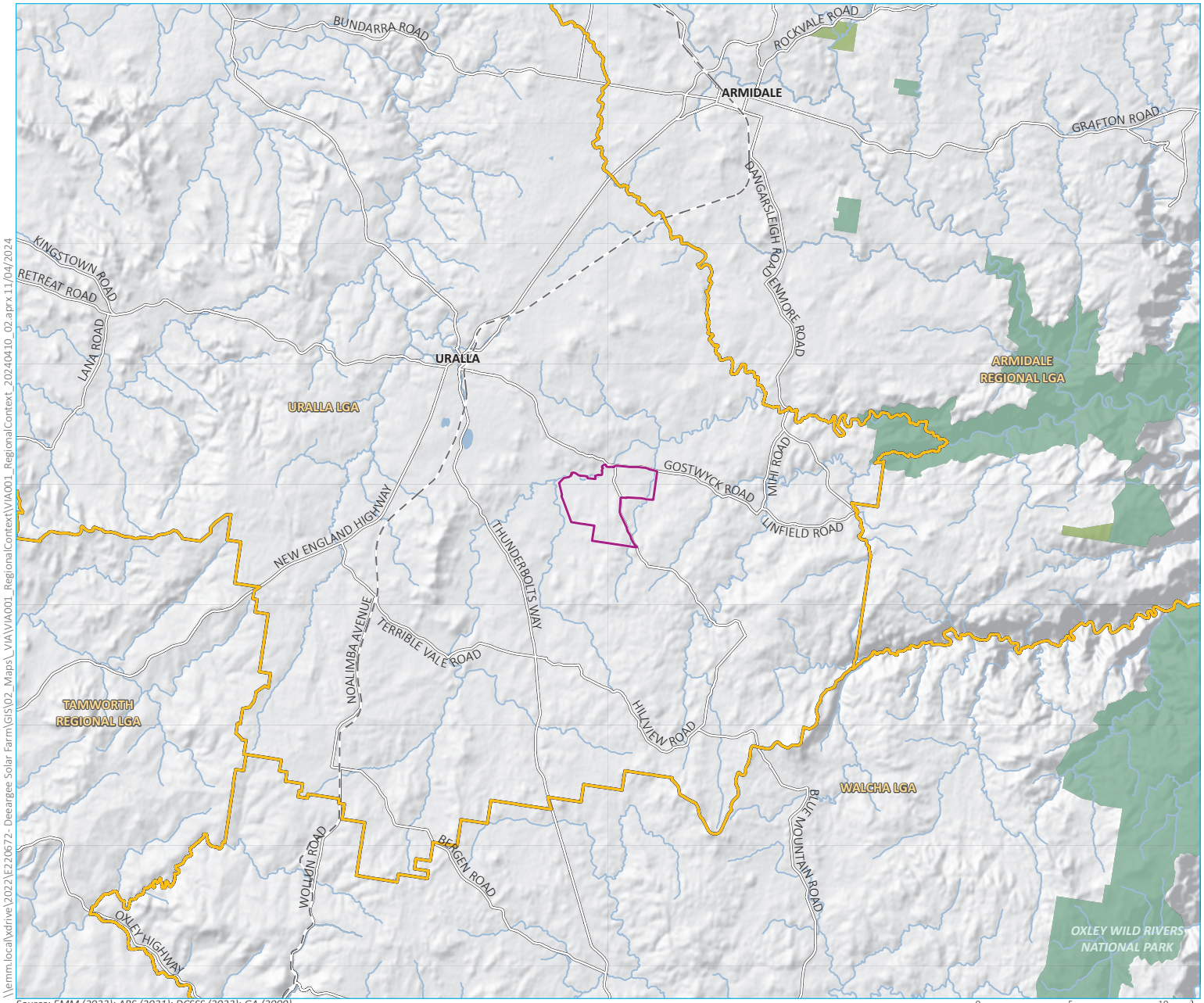
The exact land area to be covered by PV arrays and the MW generating capacity of the project is subject to change depending on the outcomes of biodiversity fieldwork, project design, the New England REZ transmission line alignment and outcomes of stakeholder engagement.

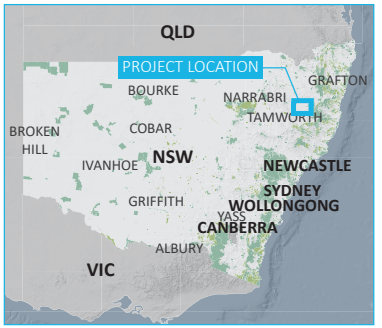
The study area adopted for this preliminary visual impact assessment is the area within 4 km of the development footprint (Figure 1.2). The development footprint (i.e. the area within which project infrastructure will be located) will be confirmed during the preparation of the environmental impact statement (EIS).

1.2 Key project components

It is anticipated that the physical layout and design of the project will comprise the following key infrastructure elements:

- Solar farm – to absorb and convert sunlight into electricity. The solar farm will comprise around 750,000 PV modules as well as mounting structures, inverter stations, internal access tracks and associated cabling.
- Battery energy storage system (BESS) – to store and discharge electricity as required with a storage capacity of up to approximately 1,400 MW(AC) two-hour energy storage or 700 MW(AC) four-hour energy storage.
- Substation (including an electrical collection system, transformers, gantries, control rooms and associated infrastructure) – an on-site substation that will be connected to the solar farm and BESS.





KEY

- Project investigation area

Existing environment

- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

Source: EMM (2023); ABS (2021); DCSSS (2023); GA (2009)

0 5 10 km

GDA2020 MGA Zone 56

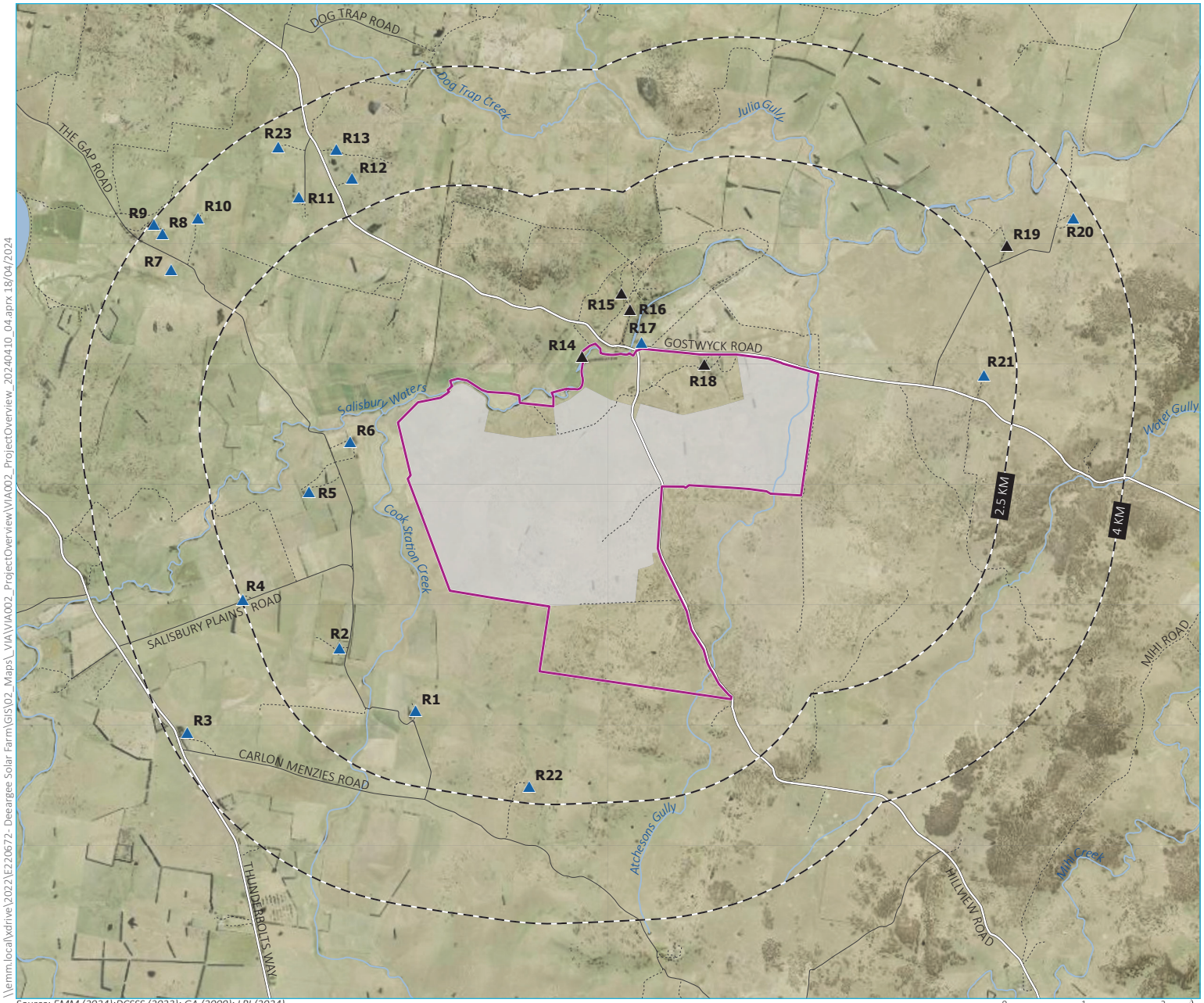
N

\\emm.localxdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_VIA\VIA001_RegionalContext\VIA001_RegionalContext_20240410_02.aprx 11/04/2024

Regional context

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 1.1

EMM
creating opportunities



KEY

- Project investigation area
- Development footprint
- Distance buffer
- Non-project related sensitive receptor
- Project-related sensitive receptor

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024);DCSSS (2023); GA (2009); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_VIA\VIA002_ProjectOverview\VIA002_ProjectOverview_20240410_04.aprx 18/04/2024

Project overview

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 1.2

EMM
creating opportunities

- Switchyard (including an electrical collection system, gantries, control rooms, grid connection and associated infrastructure) – the switchyard will be the grid/New England REZ side of the project's connection point. Limited details on the proposed New England REZ infrastructure were available at the time of writing; however, it is anticipated that an 'energy hub' will be constructed south-east of Uralla within close proximity of the project investigation area. The project will connect into the New England REZ infrastructure via a transmission line. If a switchyard is required, this will likely require subdivision.
- Operations and maintenance (O&M) infrastructure, including, O&M buildings namely meeting facilities, a temperature-controlled spare parts storage facility, supervisory control and data acquisition (SCADA) facilities, a workshop and associated infrastructure and car parking facilities.
- Site access – including access to the eastern and western sections of the solar farm from Hillview Road and/or Salisbury Plains Road.
- A new internal road network to enable access from surrounding local roads to the two array areas during construction and operations.
- Temporary construction infrastructure – to facilitate construction and likely to include laydown and storage areas and site offices.

1.3 Site context

Uralla is the largest township in the Uralla Shire LGA within the Northern Tablelands, with a population of 5,971 according to the 2021 Census (ABS 2021). It is located at the intersection of the New England Highway and Thunderbolts Way approximately 23 km south-west of the city of Armidale and is the Uralla Shire LGA's commercial and administrative centre. Major industries across Uralla, Tamworth and Armidale LGAs include beef-cattle farming, sheep farming, hospitals, teaching, administration and mining.

The project is within the New England REZ. A number of other renewable energy developments are proposed or in various stages of development in the vicinity of the project including New England Solar (in construction); Eathorpe Battery (proposed); Armidale Battery Energy Storage System (proposed), Rangoon Windfarm (proposed), Armidale East BESS (proposed), Oxley Solar Farm (approved); Bendemeer Solar Farm (proposed); Metz Solar Farm (in construction); Winterbourne Wind Farm (proposed) and Thunderbolt Wind Farm (proposed).

1.3.1 Land use

The land in the study area is zoned RU1 Primary Production under the Uralla Local Environmental Plan 2012 (Uralla LEP) and is predominantly used for agricultural purposes. The majority of the study area has been modified by historical land use practices and past disturbances associated with land clearing, cropping and intensive livestock grazing. Cattle and sheep grazing for wool, breeding stock and meat dominate agricultural activities within the study area. Some minor cropping also occurs within the study area.

1.3.2 Existing landscape

The landform pattern within and surrounding the study area can be described as a mix of low rolling hills and flatter areas that are frequently dissected by drainage networks and their adjacent flood plains, terraces and foot slopes. Elevation across the study area is variable, ranging from approximately 1,000 m to 1,040 m Australian Height Datum (AHD).

To the north of the study area is a hilly ridgeline that runs east–west. This ridgeline contains some remnant vegetation on the hilltops, but most of the land has been cleared for grazing. South of the study area, the landscape is hilly, with scattered bushland trees along the slopes. West of the study area and along Salisbury Waters is made up of cropped fields with structured windbreaks along some boundaries. The windbreaks create a visually striking element with tall dense rows of trees across the cleared landscape.

The existing landscape character within the study area and surrounds is shown in Photograph 1.1.

Photograph 1.1 Existing landscape within and surrounding the study area

1.3.3 Landscape character

The landscape of the study area and its surrounds can be characterised into three broad categories, including water corridors, agricultural plains and remnant bushland. These are defined by the vegetation, landform, land use and presence of water.

i Water corridors

Water corridors are typically vegetated and mark the landscape as they wind through the valley. The larger water corridors, like Salisbury Waters, have more pronounced vegetation associated with them, while smaller seasonal watercourses are marked by a linear depression across the landscape. An example of vegetation along Salisbury Waters is shown in Photograph 1.2.

Photograph 1.2 Water corridor landscape

ii Agricultural plains

Agricultural plains make up the majority of the landscape across the study area. The plains have been cleared to provide pastures for grazing and fields for crops. The topography is undulating with low rises divided by watercourses. There are occasional rows of tall narrow trees that serve as wind breaks, and visual screens, across the plains. Open agricultural plains west of the study area are shown in Photograph 1.3.

Photograph 1.3 Agricultural plains landscape

iii Remnant bushland

Remnant bushland is primarily on hillsides and hilltops south and east of the study area. These areas contain trees of varying densities and form a strong visual element as they rise from the cleared plains to provide a forested backdrop to the landscape. Remnant bushland on hills to the south and east of the study area is shown in Photograph 1.4.

Photograph 1.4 Remnant bushland landscape

1.3.4 Sensitive receivers

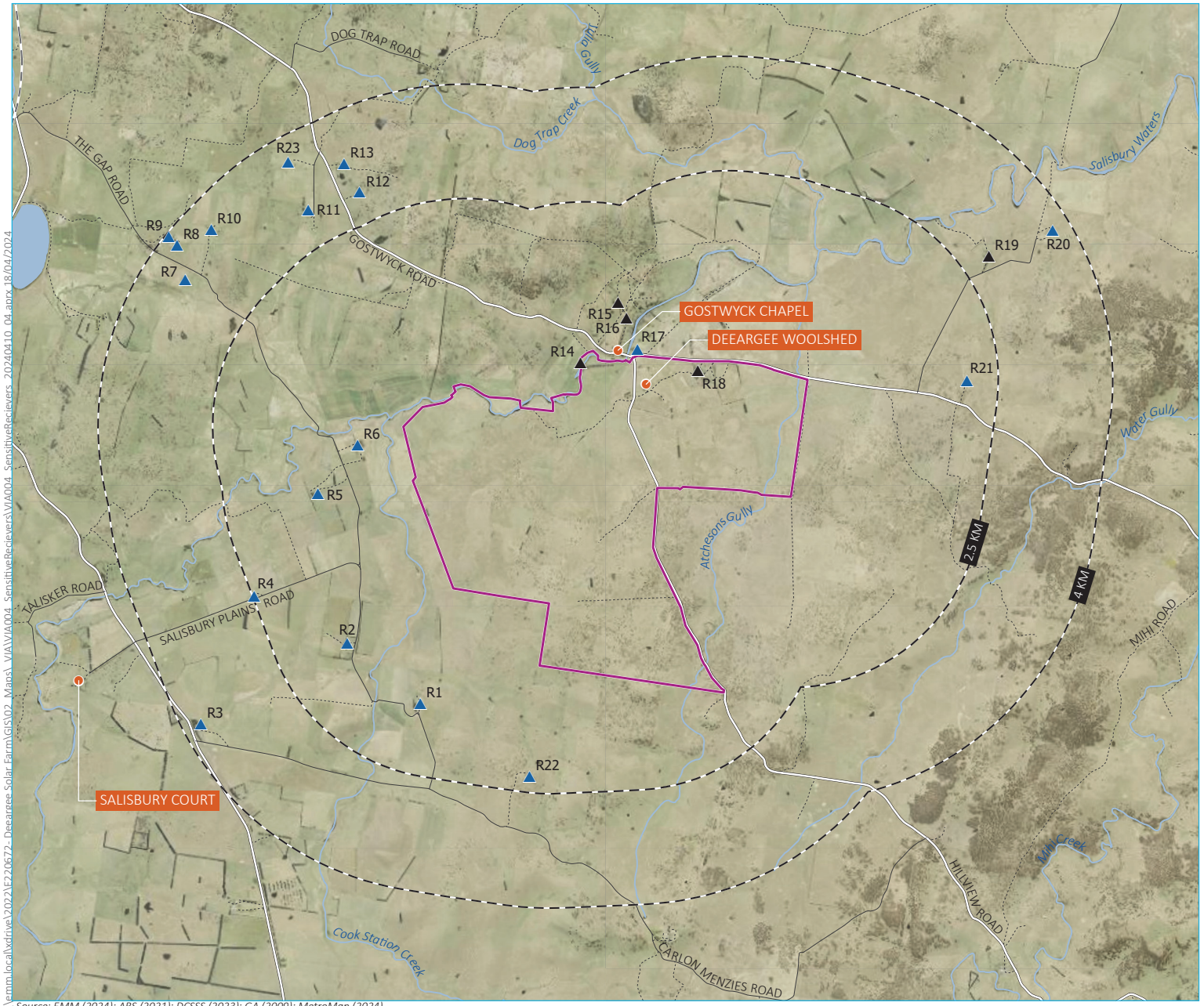
Sensitive receivers refer to people who have potential views of the project. They are represented and assessed using the locations of dwellings that surround the study area. The *Technical Supplement - Landscape and Visual Impact Assessment* (DPE 2022), which forms part of the *Large-Scale Solar Energy Guideline* (DPE 2022), limits the assessment of sensitive receivers to a distance of 4 km from the project boundaries. Therefore, only dwellings that are within 4 km of the study area have been considered in this PVIA.

There are 18 non-project related sensitive receptors (i.e. residences) within 4 km of the study area, including 1 that is within 500 m of the study area.

Also considered in the assessment, are identified heritage items. The Uralla LEP lists a number of heritage items within the Uralla Shire LGA, including three items within, or in close proximity to, the study area:

- Gostwyck Memorial Chapel and Precinct (Uralla LEP listing I10)
- Salisbury Court (Uralla LEP listing I14)
- Deeargee Woolshed (Uralla LEP listing I11).

The locations of the sensitive receivers and heritage items assessed in this PVIA are illustrated in Figure 1.3.



KEY

- Project investigation area
- Distance buffer
- Heritage item (Uralla LEP)
- Non-project related sensitive receptor
- Project-related sensitive receptor
- Rail line

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009); MetroMap (2024)

0 1 2 km

GDA2020 MGA Zone 56

N

\\emm.local\xdrive\2022\E220672_Deeargee Solar Farm\GIS\02_Maps_VIA\VIA004_SensitiveRecievers\VIA004_SensitiveRecievers_20240410_04.aprx 18/04/2024

Sensitive receivers

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 1.3

EMM
creating opportunities

2 Assessment approach

The purpose of this PVIA is to identify locations around the study area that have the potential for visual impacts. Visual impacts are changes to the existing landscape that can be seen by people. These potential impacts must be assessed and assigned a rating of high, moderate, low, or negligible. To make an assessment, a specific location must be used so the scale of change can be measured. These specific locations are viewpoints, and each viewpoint represents the views from the general area in which it is located.

This PVIA evaluates the surrounding residences, roads, rails and other publicly accessible places to identify locations that will be visually impacted by the project. These locations become viewpoints that will be assessed in detail in later chapters of this report.

This PVIA is a requirement of the *Large-Scale Solar Energy Guideline* (DPE 2022) (the Guideline) and is undertaken with reference to the Guideline and the *Technical Supplement – Landscape and Visual Impact Assessment* (DPE 2022) (Technical Supplement).

2.1 Viewpoint selection

An initial step of assessment is to identify the viewpoints that will be analysed. For the PVIA, viewpoints are limited by distance to the proposed development. The Technical Supplement requires the assessment to "identify all viewpoints from public roads and rail lines within 2.5 km of the proposed development" and "other public and private viewpoints within 4 km of the proposed development". For the purposes of this PVIA, these distances have been calculated from the nearest point of the study area to the viewpoint and is considered a conservative approach noting that project infrastructure will not occupy the full extent of the study area.

The number of viewpoints can be refined where there is an excessive number of potential viewpoints. Representative viewpoints may be selected and assessed in lieu of dwellings that are clustered together in residential areas, villages and urban areas.

2.2 Field of view

The PVIA relies on the relative size of the project when compared to the observer's field of view (FOV). It assumes an item taking up more of the FOV will have more of a visual impact than an item that takes up a smaller portion of the FOV. For example, a solar farm that occupies 10% of the FOV will have more of a visual impact than if it occupied 4% of the FOV.

Based on the above criteria, the preliminary assessment first identifies viewpoints from which the project will be visible. It then calculates the relative size of the project vertically in the FOV, and repeats the relative size calculation horizontally in the FOV.

Finally, the vertical and horizontal relative sizes are combined using the preliminary assessment tool to rate the potential impact and determine whether a detailed assessment is required for that viewpoint. The detailed assessments for viewpoints identified will be performed in the Landscape and Visual Impact Assessment during the EIS stage of the project.

2.2.1 Vertical field of view

This portion of the assessment requires the vertical FOV to be calculated for each viewpoint. The calculations for this assessment are based on the study area and it is assumed the full extent of the study area will be occupied by PV modules.

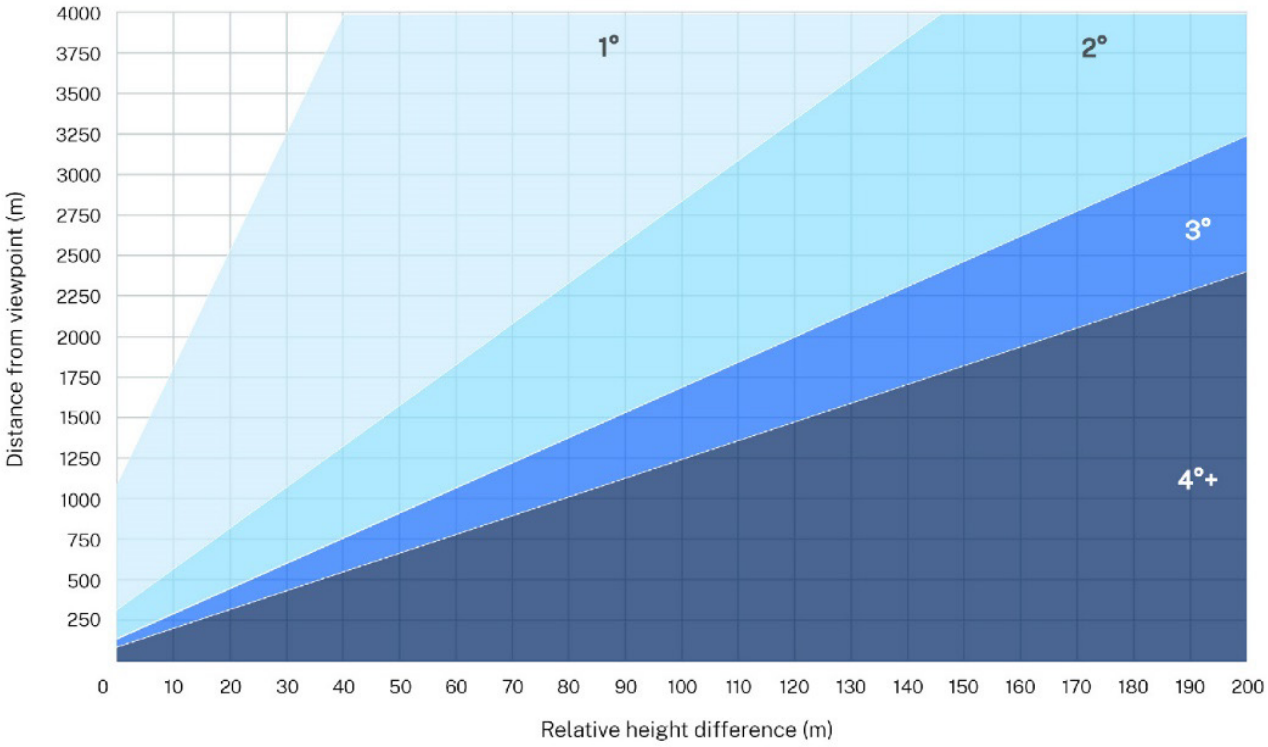
Determining the vertical FOV requires that a relative height difference be calculated. There are three methods to calculate the height difference depending on the elevation of the viewpoint relative to the PV modules:

1. Project is above and below the viewpoint – subtract the lowest point of the development from the highest point of the development.

2. Project is above the viewpoint – subtract the viewpoint height from the highest point of the development.

3. Project is below the viewpoint – subtract the lowest point of the development from the viewpoint elevation.

The resulting height difference for each viewpoint is plotted against the distance of the viewpoint from the development. The assessment tool for the vertical FOV is provided in Figure 2.1.



Source: Technical Supplement – Landscape and Visual Impact Assessment.

Figure 2.1 Vertical field of view assessment tool

The resulting indicative vertical FOV determined by the assessment tool is expressed as either 1, 2, 3 or 4+ degrees. This result for each viewpoint is assessed against the horizontal FOV in Table 2.1.

2.2.2 Horizontal field of view

The horizontal FOV is measured by mapping the project and calculating the extent of the development (in degrees) in relation to the viewpoint. The Technical Supplement requirement is to "measure the worst-case horizontal field of view of the project from each viewpoint (not considering topography or vegetation)." This calculation is performed by drawing lines from the extents of the PV modules to the viewpoint and measuring the angle formed by the two lines. The result is assessed in the preliminary assessment tool in Table 2.1.

2.2.3 Preliminary assessment tool

The preliminary assessment tool (refer Table 2.1) is used to determine if a viewpoint needs to be assessed in detail during the EIS stage of the project. It is designed to eliminate the need to assess viewpoints that are likely to experience very low impacts.

Table 2.1 Preliminary assessment tool

Horizontal FOV of project	1° vertical FOV	2° vertical FOV	3° vertical FOV	4+° vertical FOV
1–10°	No assessment required	No assessment required	No assessment required	No assessment required
11–20°	No assessment required	No assessment required	No assessment required	Assessment required
21–30°	No assessment required	No assessment required	Assessment required for all viewpoints except rail/road	Assessment required
31–40°	No assessment required	Assessment required for all viewpoints except rail/road	Assessment required for all viewpoints except rail/road	Assessment required
41–50°	No assessment required	Assessment required for all viewpoints except rail/road	Assessment required	Assessment required
51–60°	No assessment required	Assessment required for all viewpoints except rail/road	Assessment required	Assessment required
61–70°	No assessment required	Assessment required	Assessment required	Assessment required
71–130°	Assessment required for all viewpoints except rail/road	Assessment required	Assessment required	Assessment required
130°+	Assessment required	Assessment required	Assessment required	Assessment required

Source: Technical Supplement – Landscape and Visual Impact Assessment.

2.3 Viewshed mapping

Viewshed mapping is used to supplement the FOV assessment. It illustrates the area in the surrounding landscape from which the project may be visible. It also indicates areas that have intervening hills or other landforms that block views.

This PVIA uses a Zone of Visual Influence (ZVI) to map the viewshed (refer to Figure 2.2). It is generated using geographic information system (GIS) and simulates the project's visibility from the surrounding landscape. The ZVI has been restricted to a 4 km distance from the study area as this is the distance specified in the Technical Supplement. The ZVI and reverse viewshed for this project are based on the development footprint. The distance offsets shown on these figures are offsets from the development footprint.

The viewshed mapping is based on the maximum height of the PV modules, which is assumed to be 4.5 m above the ground for the purposes of this assessment.

It is important to note that the Technical Supplement requires that vegetation (trees) and built structures not be included in the mapping. The resulting maps can, therefore, only show where landforms obstruct views. This can be important for viewpoints that are behind vegetation or buildings and have no or obstructed views of the proposed development yet are assessed as having a potential impact in this PVIA.

2.3.1 Summary of ZVI

The ZVI is used to select viewpoints by indicating areas that are predicted to have views of the project. Conversely, it indicates areas that are not predicted to have any views of the project. With this knowledge, viewpoints can be selected from areas where the project is visible. Areas that do not have line-of-sight to the project can be eliminated from the assessment.

The ZVI illustrates:

- the topography surrounding the study area limits opportunities to see the project in its entirety, with surrounding hills blocking most views beyond 2.5 km
- views are variable with hilltops and higher slopes facing the project having the potential for more visibility
- based on topography alone, R6 has the potential to see the widest area of the project, given its proximity to the study area. Visual assessments associated with R6 will be investigated in the LVIA during the EIS phase.
- locations along Gostwyck Road and The Gap Road have the highest potential visibility.

The ZVI is a tool to help identify the project's potential visibility from the surrounding landscape. The extent of project infrastructure likely to be visible and the potential for impacts on visual amenity is verified by field work and photographic evidence.

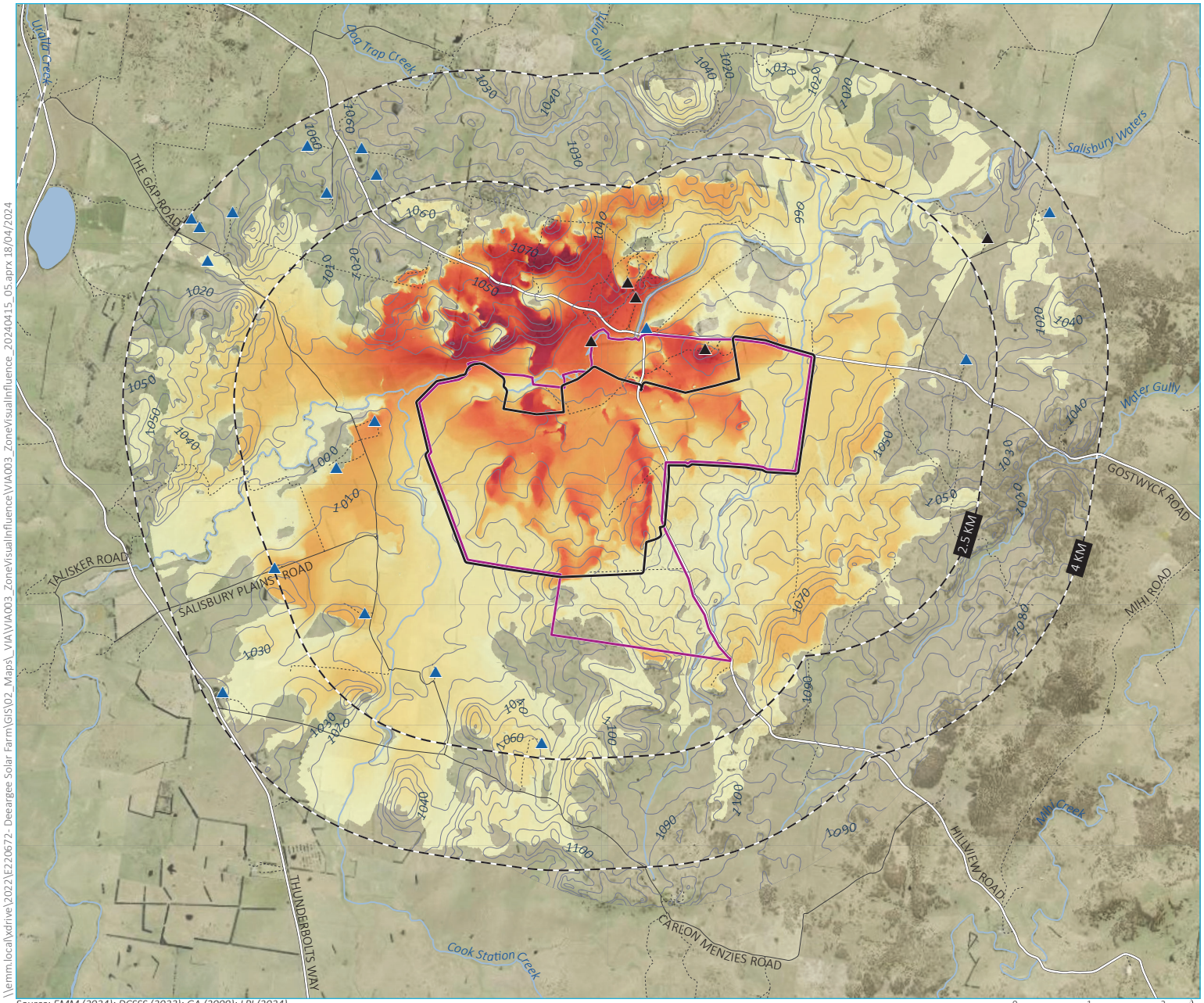
2.3.2 Reverse viewshed

Figure 2.3 is the reverse viewshed for the project. It illustrates areas within the development footprint that can be seen by the largest number of receivers. It considers 18 non-project related sensitive receptors (i.e. residences) within 4 km of the development footprint.

The reverse viewshed also represents a bare-ground scenario (i.e. does not consider screening potential of vegetation or structures in the landscape).

The reverse viewshed indicates the following:

- PV modules in areas of higher elevation will be visible to a larger number of dwellings.
- PV modules in areas of lower elevation (north-western and eastern part of the development footprint) are visible to the lowest number of dwellings.
- The western part of the development footprint is likely to be visible to the highest number of dwellings.



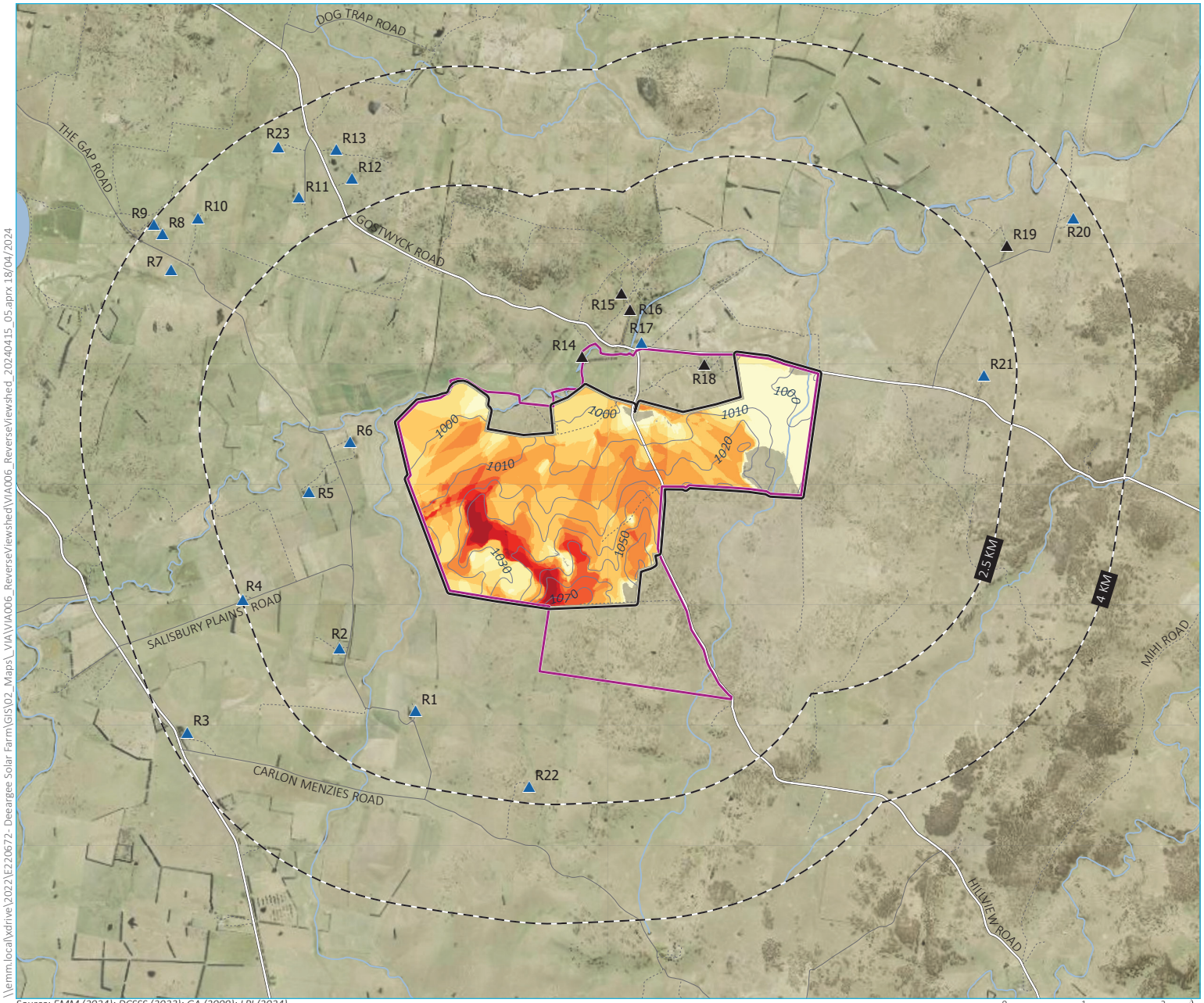
Source: EMM (2024); DCSSS (2023); GA (2009); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_VIA\VIA003_ZoneVisualInfluence\VIA003_ZoneVisualInfluence_20240415_05 aprx 18/04/2024

Zone of visual influence

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 2.2

EMM
creating opportunities



KEY

- Project investigation area
- Development footprint (offset for clarity)
- Distance buffer
- Contour (10 m)
- Non-project related sensitive receptor
- Project-related sensitive receptor

Reverse ZVI

11 Observers

1

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); DCSSS (2023); GA (2009); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_VIA\VIA006_ReverseViewshed\VIA006_ReverseViewshed_20240415_05.aprx 18/04/2024

Reverse viewshed

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 2.3

EMM
creating opportunities

3 Preliminary assessment

As noted earlier, the PVIA is meant to identify the viewpoints that need to be assessed in detail in the LVIA at the EIS stage. It begins by identifying all possible viewpoints that have views of the project. These views are then evaluated using the preliminary assessment tool. Viewpoints with low potential for visual impacts are eliminated. The remaining viewpoints with potential for substantial visual impacts are identified as needing detailed assessments in the LVIA.

3.1 Viewpoint identification

For the purposes of the preliminary assessment, there are three types of viewpoints. These are as follows:

- Roads and rail viewpoints – locations along roads and rail lines that have views into the development site. The Technical Supplement limits these viewpoints to within 2.5 km of the development.
- Public viewpoints – locations that are publicly accessible (e.g. parks, trails, shopping areas, tourist attractions, places of worship) and offer views into the development site. The Technical Supplement limits these viewpoints to within 4 km of the development.
- Private viewpoints – locations that are not accessible to the public (mainly residences) and have views into the development site. The Technical Supplement limits these viewpoints to within 4 km of the development.

3.1.1 Roads and rail viewpoints

Roads and rails carry a large number of people who have the potential for visual impacts if a road or rail line is located near a proposed development. However, due to the transitory nature of the view as travellers move through the landscape, the visual impact is reduced when compared to a stationary viewer.

Roads within the study area with potential for views of the project are shown on Figure 1.3:

- Thunderbolts Way
- Salisbury Plains Road
- Gostwyck Road
- Hillview Road
- The Gap Road
- Carlon Menzies Road.

The Main Northern Railway runs north-south between Tamworth, Uralla and Armidale. It runs west of Thunderbolts Way and is 6.1 km west of the development footprint at its closest point (Figure 1.1).

3.1.2 Public viewpoints

Public viewpoints include a number of various types of locations. They include public gathering areas like parks, sporting fields and walking trails in the surrounding community. They also include trails, scenic viewpoints and campsites that are located within regional, state and national parks, reserves and forests. Tourist attractions, heritage sites, places of worship and public buildings can also be included in this category. Public viewpoints include the following locations:

- Gostwyck Chapel
- Deeargee Woolshed
- Salisbury Court.

3.1.3 Private viewpoints

Private viewpoints are primarily residences and land held by private individuals. Access to these locations is typically restricted, limiting the number of people who are impacted by a project. However, these are locations where people spend most of their time and visual impacts are experienced over a long duration of time.

Private viewpoints are assessed in one of two ways:

- Residences near the project that are likely to have significant visual impacts area assessed individually. These are likely to require detailed assessment in the LVIA. During the LVIA process, photographs will be taken from the residence, in a location that captures views from important rooms in the house. This is dependent upon permission to access the property. If access is not granted, the viewpoint may be assessed using a wireframe diagram that gives an indication of the project's visibility.
- Residences further away from the project are assessed in groups. Typically, a viewpoint is selected to represent a cluster of residences. The viewpoint is chosen where the impact is likely to be greatest for that group of residences. Photographs that represent a cluster of residences are usually taken from the roadway or common drive.

Residences with potential visual impacts from the project are listed in Table 3.1.

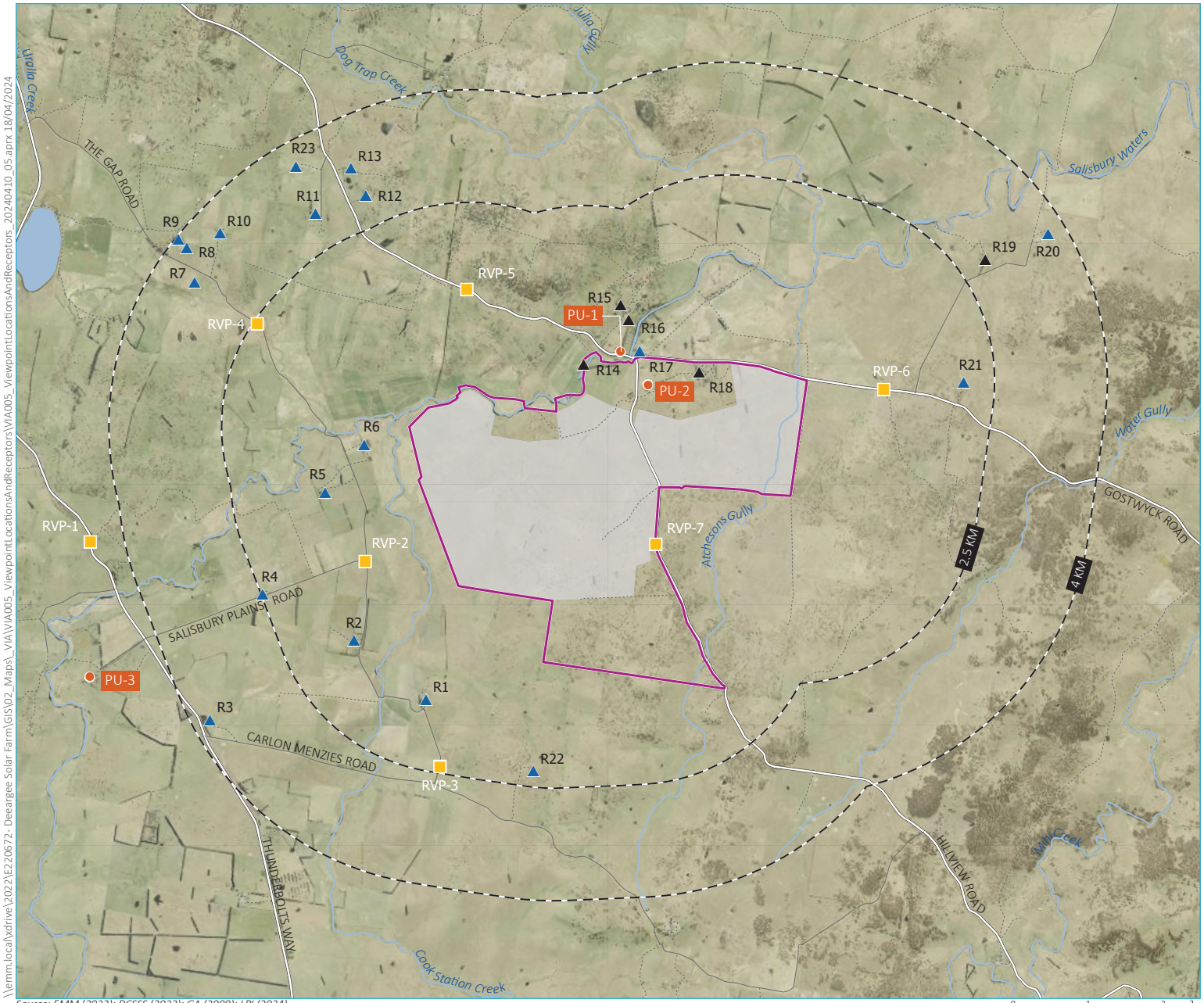
3.1.4 Selected viewpoints

The selection of viewpoints is based on the locations of residences, public areas and roads/rail. This was overlaid with the viewshed mapping to determine which locations had the potential for visual impacts from the project. Viewpoints selected satisfy both criteria, falling within the affected ZVI and characterised as a private, public or road viewpoint.

Table 3.1 lists the viewpoints selected for this assessment and the rationale for the selection. Distances in this table are from the development footprint. Figure 3.1 illustrates where the viewpoints are located.

Table 3.1 Selected viewpoints for assessment

Viewpoint reference	Viewpoint type	Location	Representative receptors	Rationale for selection
R1	Private	1057 The Gap Road	R1	Residence within 4 km
R2	Private	900 The Gap Road	R2	Residence within 4 km
R3	Private	2894 Thunderbolts Way	R3	Residence within 4 km
R4	Private	161 Salisbury Plains Road	R4	Residence within 4 km
R5	Private	664 The Gap Road	R5	Residence within 4 km
R6	Private	645 The Gap Road	R6	Residence within 4 km
R7	Private	326 The Gap Road	R7	Residence within 4 km
R8	Private	264 The Gap Road	R8	Residence within 4 km
R9	Private	245 The Gap Road	R9	Residence within 4 km
R10	Private	The Gap Road	R10	Residence within 4 km
R11	Private	544 Gostwyck Road	R11	Residence within 4 km
R12	Private	605 Gostwyck Road	R12	Residence within 4 km
R13	Private	565 Gostwyck Road	R13	Residence within 4 km
R17	Private	979 Gostwyck Road	R17	Residence within 4 km
R20	Private	310 Gostwyck War Service Road	R20	Residence within 4 km
R21	Private	183 Gostwyck War Service Road	R21	Residence within 4 km
R22	Private	679 Carlon Menzies Road	R22	Residence within 4 km
R23	Private	546 Gostwyck Road	R23	Residence within 4 km
PU-1	Public	1045 Gostwyck Road	Gostwyck Chapel	Heritage item
PU-2	Public	Gostwyck Road	Deeargee Woolshed	Heritage item
PU-3	Public	3031 Thunderbolts Way	Salisbury Court	Heritage item
RVP-1	Road	Thunderbolts Way	Motorists	Road with public access within the study area. Views from this road are known to be of importance for the community.
RVP-2	Road	Salisbury Plains Road	Motorists	Road with public access within the study area.
RVP-3	Road	The Gap Road	Motorists	Road with public access within the study area.
RVP-4	Road	The Gap Road	Motorists	Road with public access within the study area.
RVP-5	Road	Gostwyck Road	Motorists	Road with public access within the study area.
RVP-6	Road	Gostwyck Road	Motorists	Road with public access within the study area.
RVP-7	Road	Hillview Road	Motorists	Road with public access within the study area.



KEY

- Project investigation area
- Development footprint
- Distance buffer
- Road viewpoint
- Public viewpoint (heritage item)
- Non-project related sensitive receptor
- Project-related sensitive receptor

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2023); DCSSS (2023); GA (2009); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_VIA\VIA005_ViewpointLocationsAndReceptors\VIA005_ViewpointLocationsAndReceptors_20240410_05.aprx 18/04/2024

Viewpoint locations and receptors

Deeargee Solar and Battery Project
Preliminary visual impact assessment
Figure 3.1

EMM
creating opportunities

3.2 Preliminary assessment

The preliminary assessment tools specified by the Technical Supplement have been applied to each selected viewpoint. The assessment criteria and results are listed in Table 3.2.

Table 3.2 Preliminary assessment

Viewpoint reference	Viewpoint type	Distance to development footprint (m)	Relative height difference (m)	Vertical FOV (degrees)	Horizontal FOV (degrees)	Detailed assessment required
R1	Private	1,560	75	2	65	Yes
R2	Private	1,560	75	2	59	Yes
R3	Private	3,760	75	1	35	No
R4	Private	2,460	75	1	49	No
R5	Private	1,260	75	3	76	Yes
R6	Private	600	75	4	88	Yes
R7	Private	3,450	75	1	41	No
R8	Private	3,790	75	1	40	No
R9	Private	3,990	75	1	39	No
R10	Private	3,620	75	1	43	No
R11	Private	3,000	75	1	50	No
R12	Private	2,925	75	1	56	No
R13	Private	3,310	75	1	53	No
R17	Private	1,200	75	3	140	Yes
R20	Private	3,780	75	1	31	Yes
R21	Private	2,070	75	2	40	Yes
R22	Private	2,260	75	1	71	Yes
R23	Private	3,700	75	1	46	No
PU-1	Public	820	75	4	161	Yes
PU-2	Public	310	75	4	191	Yes
PU-3	Public	5,000	75	1	27	No
RVP-1	Road	4,550	75	1	29	No
RVP-2	Road	1,040	75	3	86	Yes
RVP-3	Road	2,450	75	1	58	No
RVP-4	Road	2,460	75	1	48	No
RVP-5	Road	1,320	75	2	99	Yes
RVP-6	Road	1,025	75	3	53	Yes
RVP-7	Road	790	75	4	175	Yes

The preliminary assessment indicates that 14 viewpoints will require detailed assessment as part of the EIS:

- 8 private viewpoints (i.e. residences)
- 2 public viewpoints (i.e. heritage items)
- 4 road viewpoints (i.e. public roads).

As part of the LVIA, viewpoints that are close together may be combined and represented with a representative viewpoint. Also, some of the viewpoints identified for detailed assessment may not have visibility or visual impacts from the project as this PVIA does not consider any vegetation or structures that may screen views of project infrastructure. Each of the viewpoints will need on-site verification with photographic evidence of potential visual impacts. This verification will take place during the preparation of the detailed LVIA.

If the development footprint is refined as a result of constraints identification or design refinements, the number of viewpoints requiring detailed assessment as part of the EIS may also be reduced.

4 Conclusion

4.1 Landscape character

The landscape within and surrounding the study area can be described as a mix of low rolling hills that are frequently dissected by drainage courses and their adjacent flood plains, terraces and foot slopes. It is mostly cleared of native vegetation and used for grazing and cropping. Lines of trees used for windbreaks are visible to the east and north of the study area. Remnant bushland is visible to the south and east of the study area.

The PVIA provided a preliminary assessment of the existing landscape within the study area and surrounds. In doing so, it identified three landscape character categories that will be refined and characterised in greater detail in the EIS stage of the project. The categories identified are:

- water corridors – watercourses with associated depressions and riparian vegetation
- agricultural plains – cleared land for grazing and cropping
- remnant bushland – forested areas usually on hilltops and upper slopes.

4.2 Viewpoints

The preliminary assessment is primarily a tool to help identify viewpoints with potential to experience visual impacts. It offers a structured process to identify potential viewpoints and evaluate whether a viewpoint needs further assessment as part of the EIS.

This preliminary assessment identified 18 private viewpoints, 3 public viewpoints and 7 road viewpoints in the landscape surrounding the project. After applying the preliminary assessment tools, 14 viewpoints were identified as needing further assessment.

References

Australian Bureau of Statistics (2021), https://abs.gov.au, accessed December 2023.

Donaldson, Joseph J. 2019, *Mitigating Visual Impacts of Utility-Scale Energy Projects*, Visual Resource Stewardship Conference Proceedings.

Landscape Institute and Institute of Environmental Management and Assessment (2013), *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) Third Edition.

NSW Department of Planning and Environment 2022, *Large-Scale Solar Energy Guideline*.

NSW Department of Planning and Environment 2022, *Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline*.

NSW Department of Planning and Environment (2022), *eSPADE Spatial Viewer: https://www.environment.nsw.gov.au/eSpade2WebApp*.

Transport for NSW, Centre for Urban Design (2020), *Guideline for Landscape Character and Visual Impact Assessment, EIA-N04*, Version 2.2.

Tudor, Christine 2019, *An approach to landscape sensitivity assessment – to inform spatial planning and land management*. Natural England.

Uralla Shire Council (2012), *Uralla Local Environmental Plan 2012.*

Australia

SYDNEY
Ground floor 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA
Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE
Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
Suite 8.03 Level 8
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH
Suite 9.02 Level 9
109 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO
2345 Younge Street Suite 300
Toronto ON M4P 2E5
T 647 467 1605

VANCOUVER
60 W 6th Ave
Vancouver BC V5Y 1K1
T 604 999 8297

linkedin.com/company/emm-consulting-pty-limited

emmconsulting.com.au

Appendix D

Social impact assessment scoping report

EMM
creating opportunities

Deeargee Solar and Battery Project

Social Impact Assessment - Scoping Report

Prepared for ACEN Australia Pty Ltd

April 2024

Deeargee Solar and Battery Project

Social Impact Assessment - Scoping Report

ACEN Australia Pty Ltd

E220672 RP1

April 2024

Version	Date	Prepared by	Reviewed by	Comments
V1	4 April 2024	Myf Jagger	Chris Mahoney	Draft for ACEN review.
V2	18 April 2024	Myf Jagger	Chris Mahoney	Final for ACEN review.
V3	23 April 2024	Myf Jagger	Chris Mahoney	Final

Approved by

Chris Mahoney
Associate Director
23 April 2024

Level 1 87 Wickham Terrace
Spring Hill QLD 4000

TABLE OF CONTENTS

Annexures

Tables

Figures

1 Introduction

ACEN Australia Pty Ltd (ACEN) proposes to develop the Deeargee Solar and Battery Project (the project) within the New England Renewable Energy Zone (REZ). The project will be located approximately 12 kilometres (km) south-east of Uralla township and within the Uralla Shire Council local government area (LGA).

The project is State significant development (SSD) pursuant to State Environmental Planning Policy (Planning Systems) 2021 (the Planning Systems SEPP). It requires assessment and approval under Part 4, Division 4.7 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act).

This social impact assessment (SIA) scoping report was prepared by EMM Consulting Pty Limited (EMM) on behalf of ACEN. It addresses the scoping requirements of the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline) (DPE 2023b) and the *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects* (SIA Technical Supplement) (DPE 2023c).

The SIA scoping report continues to inform project development, supports ACEN's request to the NSW Department of Planning, Housing and Infrastructure (DPHI) for Secretary's Environmental Assessment Requirements (SEARs) and will inform the preparation of an environmental impact statement (EIS) and SIA for the project.

1.1 The applicant

The applicant for the project is ACEN, a wholly owned subsidiary of ACEN Corporation, the listed energy platform of the Ayala group. The company has approximately 4,000 MW of attributable capacity from facilities in the Philippines, Vietnam, Indonesia, India and Australia. Its renewable energy assets include solar, wind, battery and pumped hydro projects across Australia.

ACEN's first operational project in Australia is New England Solar, which has been in construction since 2021 and commenced operations in 2023. It is one of the largest solar projects in Australia participating in the National Energy Market (NEM) and the first solar project in Australia to be financed on a fully merchant basis. Stubbo Solar, in the Central West Orana REZ, is ACEN's second project, which commenced construction in late 2022. Other ACEN projects include Birriwa Solar (NSW), Valley of the Winds (NSW), Aquila Wind (NSW), Phoenix Pumped Hydro (NSW), Robbins Island and Jim's Plain Wind (TAS) and Northeast Wind (TAS).

ACEN's aim is to provide low cost, clean electricity in a socially and environmentally responsible way. ACEN is committed to transition the company's generation portfolio to 100% renewable energy by 2025 and to achieve net zero greenhouse gas (GHG) emissions by 2050.

Contact details for ACEN are provided in Table 1.1.

Table 1.1 Summary of applicant details

Company name	ACEN Australia Pty Ltd
ACN	616 856 672
Address	Suite 2, Level 2, 15 Castray Esplanade, Battery Point, 7004 Tasmania

1.2 The project

1.2.1 Overview

The project involves the development, construction and operation of a solar photovoltaic (PV) electricity generation facility and battery energy storage system (BESS). The project is expected to have a generation capacity of up to 320 megawatts (MW) and will be constructed on land currently used for grazing and cropping.

The project is within the New England REZ, which has been formally declared by the NSW Minister for Energy under Section 19(1) of the NSW *Electricity Infrastructure Investment Act 2020*. The New England region of NSW has been selected by the NSW Government for the development of the New England REZ due to its significant natural energy resources and has an intended network capacity of 8 gigawatts (GW).

A project investigation area of approximately 1,363 hectares (ha) has been the focus of preliminary baseline investigations. Within the project investigation area, the development footprint (i.e. the area within which project infrastructure will be located) is 959 ha and will continue to be refined during the preparation of the environmental impact statement (EIS).

The project investigation area is south of New England Solar (SSD-9255) and is partly within the southern array area, which was nominated for the development of a solar farm and associated infrastructure as part of the *New England Solar Farm Environmental Impact Statement* (EMM 2019) before being withdrawn from the development application during the submissions phase. The project investigation area for Deeargee Solar and Battery Project has been informed by feedback from the local community during the public exhibition of the EIS for the New England Solar, including a 4 km setback from Thunderbolts Way.

The exact land area to be covered by PV arrays and the MW generating capacity of the project is subject to change depending on the outcomes of environmental constraints identification, project design, the New England REZ transmission line alignment and outcomes of stakeholder engagement.

The project will connect to the grid via new infrastructure proposed by Energy Corporation of NSW (EnergyCo) as part of the New England REZ.

Site access will be via either Hillview Road or Salisbury Plains Road. The transport route to the development footprint will be confirmed through the EIS but is expected to comprise vehicle movements from the New England Highway, which will access the project via:

- Option 1: Salisbury Street, Duke Street, East Street and Gostwyck Road before turning onto Hillview Road
- Option 2: Salisbury Street, Duke Street, Thunderbolts Way and Salisbury Plains Road (this option will require a new easement to be established over private land to access the development footprint, however it is noted there is a paper road at this location)
- Option 3: Salisbury Street, Duke Street, Thunderbolts Way, Carlon Menzies Road before turning onto Hillview Road.

Construction of the project is expected to be completed over approximately 24 months. A workforce of approximately 400 personnel will be required on-site during peak construction.

ACEN will source workers from the local area as far as practicable and will refine the project's workforce accommodation strategy as part of the EIS. The following options are being considered to accommodate the project's non-local workforce:

- off-site accommodation with local providers (including the use of available rental and motel accommodation in surrounding townships and regional centres)
- use of available student accommodation at the University of New England's Armidale Campus (where this does not impact the university's ability to support students on campus)
- a standalone accommodation facility on-site or within proximity of the development footprint
- use of accommodation facilities constructed by EnergyCo within the New England REZ.

The operational lifespan of the project will be in the order of 30 years unless the facility is re-powered at the end of the PV modules' technical life. Throughout operations, a workforce of approximately 5–10 employees will be required.

Once the project reaches the end of its investment and operational life, the project infrastructure will be decommissioned and the development footprint returned to its pre-existing land use, namely suitable for grazing of sheep and cattle, or another land use as agreed by the project owner and the landholder at that time.

A detailed description of the project is available in Chapter 3 of the scoping report.

1.2.2 Project areas

The project investigation area is approximately 1,363 ha (Figure 1.1). Within the project investigation area, a development footprint of approximately 959 ha has been selected. The development footprint has been the subject of an iterative design process that has been informed by the outcomes of preliminary biodiversity fieldwork and constraints identification. The final layout and capacity of the project will be selected on the basis of environmental constraints identification, outcomes of stakeholder engagement, engineering assessments and design of project infrastructure.

1.2.3 Site considerations and local features

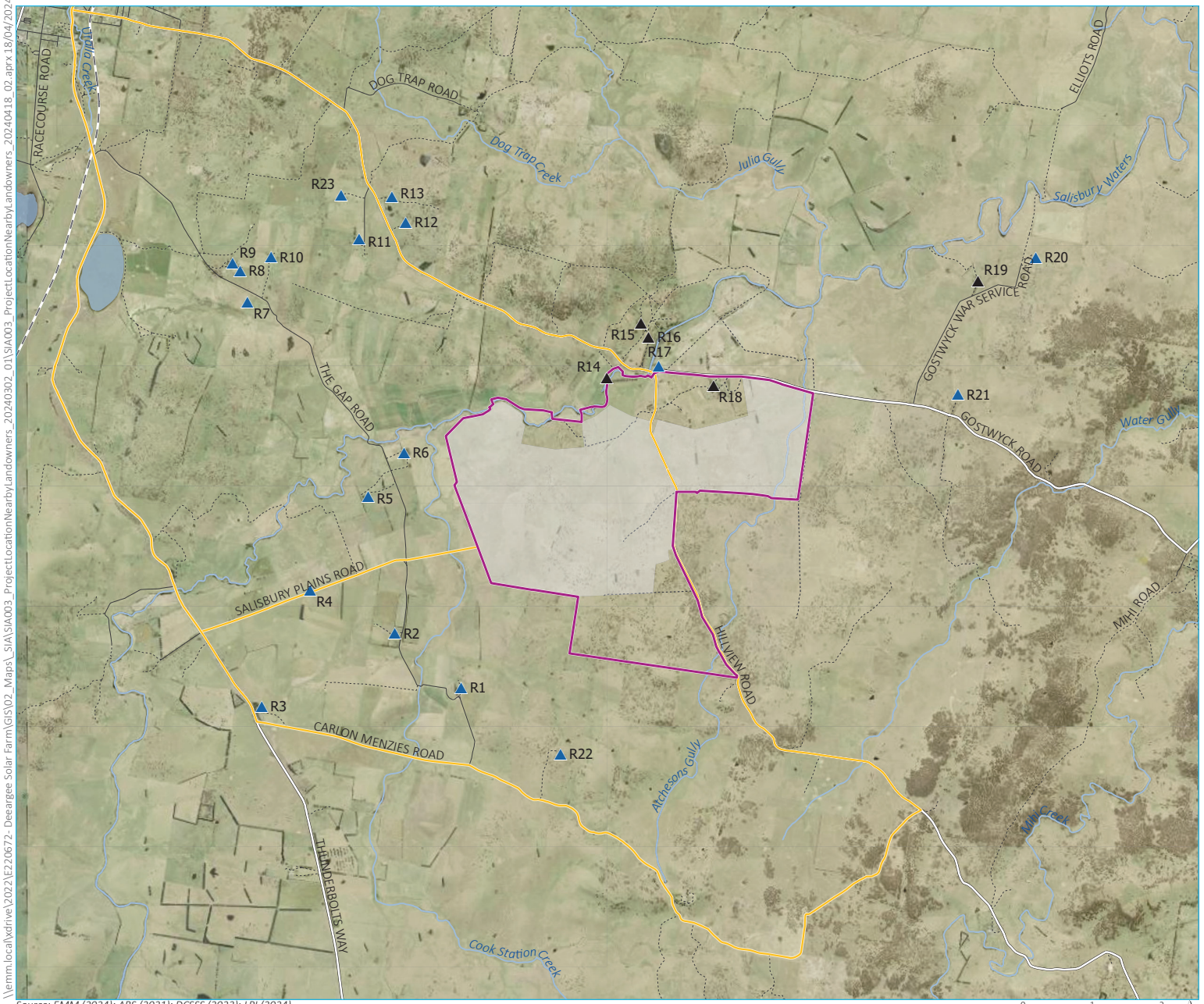
As noted in Section 1.2.1, the project is proposed for development on cleared grazing land, is situated within the New England REZ and is approximately 5 km south of ACEN's existing operational New England Solar. The nearest large urban centre is Armidale, approximately 30 km north-east of the project investigation area.

Land use in the project investigation area is zoned RU1 Primary Production under the Uralla Local Environmental Plan 2012 (Uralla LEP). It has been modified by historical land use practices and past disturbances associated with land clearing, cropping and intensive livestock grazing. Cattle and sheep grazing for wool, breeding stock and meat are the dominant agricultural activities within the project investigation area, with small amounts of cropping also undertaken.

There are 18 non-project related sensitive receptors (i.e. residences) within 4 km of the project investigation area, including 1 that is within 500 m (Figure 1.1). The EIS will include assessments of potential amenity impacts (i.e. noise, traffic and visual) from the closest non-project related sensitive receptors.

As described in Chapter 6 of the scoping report:

- eleven Aboriginal heritage sites have previously been identified within or near the project investigation area, with additional field survey proposed to be completed as part of the EIS
- fourteen historic heritage sites have previously been identified within or near the project investigation area, with additional field survey proposed to be completed as part of the EIS.



KEY

- Project investigation area
- Development footprint
- Access corridor (option)
- Non-project related sensitive receptor
- Project-related sensitive receptor

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody

Source: EMM (2024); ABS (2021); DCSSS (2023); LPI (2024)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SIA\SIA003_ProjectLocationNearbyLandowners_20240302_01\SIA003_ProjectLocationNearbyLandowners_20240418_02.aprx 18/04/2024

Project location and nearby landowners

Deeargee Solar and Battery Project
Social Impact Scoping Report
Figure 1.1

EMM
creating opportunities

2 Methodology

This section describes the methodology that has been used to complete social impact scoping and initial assessment, in accordance with the SIA Guideline (DPE 2023a) and the International Association for Impact Assessment's *SIA Guidance for Assessing and Managing the Social Impacts of Projects* (Vanclay, et al. 2015).

SIA is a process for analysing, monitoring, and managing the social consequences (both positive and negative) of a development (Vanclay, et al. 2015). Social impact scoping is an exercise to determine the main issues of concern and the interested affected parties for a particular planned intervention (Vanclay, et al. 2015).

As outlined in the SIA Guideline (DPE 2023b), the SIA process involves three distinct but iterative phases:

- Phase 1: social impact scoping and initial assessment
- Phase 2: social impact assessment
- Phase 3: social impact management and monitoring.

Each phase is underpinned with objectives and key tasks to generate deliverables as detailed in Table 2.1.

Table 2.1 Phases of the SIA process

	Phase 1: social impact scoping and initial assessment	Phase 2: social impact assessment	Phase 3: social impact management and monitoring
Objective	Ensure that proportionate depth and scope is given to the potentially significant social impacts of the project.	Identify, describe and assess the social impacts which may occur in local and regional communities as a result of the project and propose responses to the identified social impacts.	Outline how social impacts associated with the project will be managed, monitored and adapted.
Key tasks/elements	• Defining the project's social locality • Initial analysis of social baseline • Preliminary identification and evaluation of social impacts • Considering and articulating project refinement • Community and stakeholder engagement	• Summarising outcomes of scoping • Detailed social baseline analysis • Predict and analyse the extent and nature of likely social impacts • Develop responses (avoidance, mitigation and enhancement measures) to social impacts • Identify and explain residual social impacts • Community and stakeholder engagement	• Program to monitor predicted social impacts against actual impacts • Program for the ongoing analysis of social risks and opportunities • Process to release monitoring results • Ongoing community and stakeholder engagement
Deliverable	SIA scoping report (including SIA scoping worksheet)	SIA report	Social impact management plan (if required)

As shown in Table 2.1, scoping forms an essential element of the SIA process and has been informed by the following key tasks:

- defining the project's social locality
- initial analysis of social baseline
- preliminary identification and evaluation of social impacts

- considering and articulating project refinement
- community and stakeholder engagement.

These key tasks are described below.

2.1 Defining the social locality

The factors considered to define the project's social locality include:

- the nature and scale of the project and its associated activities
- the characteristics of the project investigation area (including its existing land use, its history, nearby built or natural features and levels of access and connectivity)
- the characteristics of surrounding communities (including relevant demographic or social trends, cultural values, and community assets, including key stakeholder interests and experiences likely to be affected by the project)
- consideration of the project's development (in the context of regional development objectives and cumulative project developments).

Outcomes of the above activities informed definition of the social locality adopted for the SIA (Section 3). To enable social baseline data collection and analysis, the Australian Bureau of Statistics (ABS) Australian Statistical Geography Standard (ASGS) has been used to help define the social locality. This structure is outlined in Table 2.2.

The ASGS statistical areas applied to define the social locality included the following:

- Suburbs and Localities (SALs) – approximate representation of the officially recognised boundaries of suburbs and localities as defined by the State and Territory governments of Australia.
- Urban Centres and Localities (UCLs) – representation of areas of concentrated urban development.
- Significant Urban Areas (SUAs) – representation of significant towns and cities of 10,000 persons or more.
- Local Government Areas (LGAs) – approximate representation of gazetted local government boundaries as defined by each state and territory.
- Statistical Area 4 (SA4) – represent the largest sub-state regions and used to understand regional data and to represent and analyse labour markets.

Table 2.2 Project social locality mapped to ASGS

Social locality	Geographic area	ASGS statistical area code	Relevance to the project
Local area	11001118811	Statistical Areas Level 1 (SA1) 11001118811	The project investigation area is within SA1 110001118811.
Key urban areas	Uralla township	UCL 115143	Uralla township is approximately 12 km north-west of the project investigation area.
	Armidale city	SUA 1002	Armidale is the nearest regional city and is approximately 30 km north of the project investigation area.

Table 2.2 Project social locality mapped to ASGS

Social locality	Geographic area	ASGS statistical area code	Relevance to the project
Sub-regional area	Uralla Shire	LGA 17650	The project investigation area is within the Uralla LGA.
Regional Area of Reference (New England REZ)*	Tenterfield Shire	LGA 17400	The project investigation area is within the New England REZ, which spans in part the seven listed LGAs.
	Glen Innes Severn	LGA 13010	
	Inverell Shire	LGA 14220	
	Armidale Regional	LGA 10180	
	Uralla Shire	LGA 17650	
	Tamworth Regional	LGA 17310	
	Walcha	LGA 17850	
State Area of Reference (NSW)	New South Wales	STE 1	The project investigation area is within State of New South Wales, which provides the State-level Area of Reference for scoping purposes.

2.2 Initial social baseline analysis

Initial analysis of the social baseline serves to build an understanding of the socio-economic characteristics of the communities within the project's social locality. It draws on a range of primary and secondary information sources to obtain both qualitative and quantitative data.

Quantitative data sources included:

- ABS Census
- DPHI population projections
- Commonwealth Government's labour market portal (unemployment and labour force participation data).
- Australian Institute of Health and Welfare (health and wellbeing data).

Qualitative data sources included:

- outcomes of stakeholder and community engagement for qualitative data on community values, capacities and challenges associated with social infrastructure and community facilities and to verify quantitative data
- literature review of:
  - government policy and publications relevant to the project investigation area
  - peer-reviewed academic journal articles relevant to the project
  - industry-commissioned surveys and research reports

- desktop review for asset and service mapping, including:
  - areas and elements of social interest
  - the location of social infrastructure
  - other major projects.

The initial social baseline analysis for the project is provided in Section 4 and will be refined during Phase 2 (the preparation of the SIA).

2.3 Community and stakeholder engagement

A stakeholder identification process was undertaken to support ACEN's planning and delivery of community engagement to inform the project, including scoping for the SIA and EIS. Stakeholders are defined as 'any individual, group of individuals, organisation or politics entity with an interest or stake in the outcome of a decision' (International Association for Public Participation 2015). This identification process has been comprehensive, building on previous stakeholder mapping undertaken for New England Solar.

The range of community and stakeholder inputs that have been drawn upon in this scoping assessment are presented in Section 5.

2.4 Preliminary identification and evaluation of social impacts

The initial identification and evaluation of social impacts has been informed by the SIA scoping worksheet (DPE 2023b). This decision support tool is used to demonstrate how issues from scoping inform the level of assessment undertaken for each identified impact in the SIA (Phase 2).

Table 2.3 presents the eight categories of social impacts considered during scoping, in accordance with the SIA Guideline (DPE 2023b).

Table 2.3 Social impact categories

Impact category	Description
Way of life	How people live, how they get around, how they work, how they play, and how they interact each day.
Community	Composition, cohesion, character, how the community functions, resilience and people's sense of place.
Accessibility	How people access and use infrastructure, services and facilities, whether provided by a public, private, or not-for-profit organisation.
Culture	Both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings.
Health and wellbeing	Physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
Surroundings	Ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
Livelihoods	People's capacity to sustain themselves through employment or business.
Decision-making systems	Extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

The project was assessed according to its potential to impact people, whether previous investigations of the impact have been undertaken, the potential for cumulative impacts, and possible mitigation or enhancement measures to reduce negative impacts and enhance positive impacts.

Based on the assessment of these impact characteristics, the likelihood and magnitude of the potential impact (positive or negative) and their occurrence across differing stakeholder groups was determined through application of the impact significance matrix available within the SIA Guideline (DPE 2023b). The ascribed significance of social impact determines the required level of assessment, as follows:

- **Detailed:** the project may result in significant social impacts, including cumulative impacts.
- **Standard:** the project is unlikely to result in significant social impacts, including cumulative impacts.
- **Minor:** the project may result in minor social impacts.
- **Not relevant:** the project will have no social impact, or the social impacts of the project will be so small that they do not warrant consideration.

The assessment levels have been used to determine the scope and detail required for the SIA (Phase 2).

2.5 Assumptions and limitations

This SIA scoping report has been based on currently available information for the project investigation area and development footprint. The project layout will be refined during preparation of the SIA and EIS, which will also include consideration of workforce accommodation and road upgrade requirements, as noted in Section 1.2.

As of the 2021 ABS Census, SAL classifications replaced the State Suburb Classification (SSC); however, they remain comparable. This report refers to SALs when discussing the 2021 ABS Census data and, where relevant, refers to SSCs when citing ABS Census data from previous years.

Community and stakeholder engagement for the scoping phase has not been undertaken directly by the author of this SIA scoping report. While consultation inputs to this SIA scoping report are referred to as a secondary data source, the history and depth of local engagement regarding project development provides adequate foundation for the purpose of this report.

3 The social locality

3.1 Social locality

The project's social locality is shown in Figure 3.1 and has been informed by consideration of key project activities, stakeholders likely to be affected by the project, and the regional and local development context. The social locality will be further refined as required during the assessment phase to consider any updates to the project description and the implications of cumulative regional development.

3.2 Key project activities informing social locality

An overview of key project activities, the potential change to the social environment, the potential geographical extent of the social change, and relevant baseline indicators are outlined in Table 3.1.

Table 3.1 Key project activities and potential change to social environment

Key project activity	Potential change to social environment	Geographical extent of social change	Relevant baseline indicator
Demand for local employment, and supply of goods and services during construction	• Change in demand for goods and services	• Regional	• Economic activity, including major projects and projected cumulative demand on local labour and SMEs in New England REZ
	• Change in demand for labour	• Regional	• Labour force participation • Unemployment rates • Key industries of employment • First Nations population size and proportion • Population trends and projections • Indices of economic resources (SEIFA) • Regional development context (REZ)
Landholder agreements	• Change in landowner income stream	• Local	• Household income
Neighbour agreements	• Change in landowner income stream	• Local	• Household income
Vegetation clearing during construction and maintained in operation	• Changes to landscape and wildlife habitat	• Project investigation area • Local	• Land use • Community perceptions • Community values • Heritage values • Environmental values

Table 3.1 Key project activities and potential change to social environment

Key project activity	Potential change to social environment	Geographical extent of social change	Relevant baseline indicator
Construction of the project	• Change to traffic conditions in the local road network	• Local • Proposed transport route	• Access and connectivity • Community perceptions • Health and emergency services and infrastructure and capacity • Regional development context (REZ)
	• Change to perceived social cohesion	• Local • Proposed transport route	• Crime statistics • Access to emergency, health and social services • Community perceptions • Access and connectivity • Regional development context (REZ)
	• Change to amenity (including visual, noise, vibration, and dust)	• Local • Proposed transport route	• Community values • Environmental values • Cultural values • Community perceptions • Community health and wellbeing
	• Change in demand for local facilities and services, particularly housing and accommodation	• Local • Regional	• Health and emergency services and infrastructure and capacity • Housing availability and affordability • Community perceptions • Community values • Regional development context
	• Disturbance or displacement of Aboriginal and non- Aboriginal heritage sites and/or items • Change to cultural values	• Project investigation area • Proposed transport route • Local • Regional	• Community values • Cultural values
Operation of the project	• Change to amenity (including visual)	• Local • Proposed transport route	• Community values • Environmental values • Cultural values • Community perceptions • Community health and wellbeing
	• Change to perceptions of property values for nearby property owners	• Local	• Housing availability and affordability • Community perceptions • Community values • Regional development context (REZ)
	• Disturbance or displacement of Aboriginal and non- Aboriginal heritage sites and/or items • Change to cultural values	• Project investigation area • Proposed transport route • Local • Regional	• Community values • Cultural values

3.3 Regional development context

There are several operating, approved and proposed major projects in the project's social locality. The scope for potential cumulative social impacts resulting from concurrent development activities includes the potential for pressures on local housing and accommodation conditions, increased traffic on road networks and potential changes to local character or safety, labour and skills shortages and changes to the local landscape and environmental amenity.

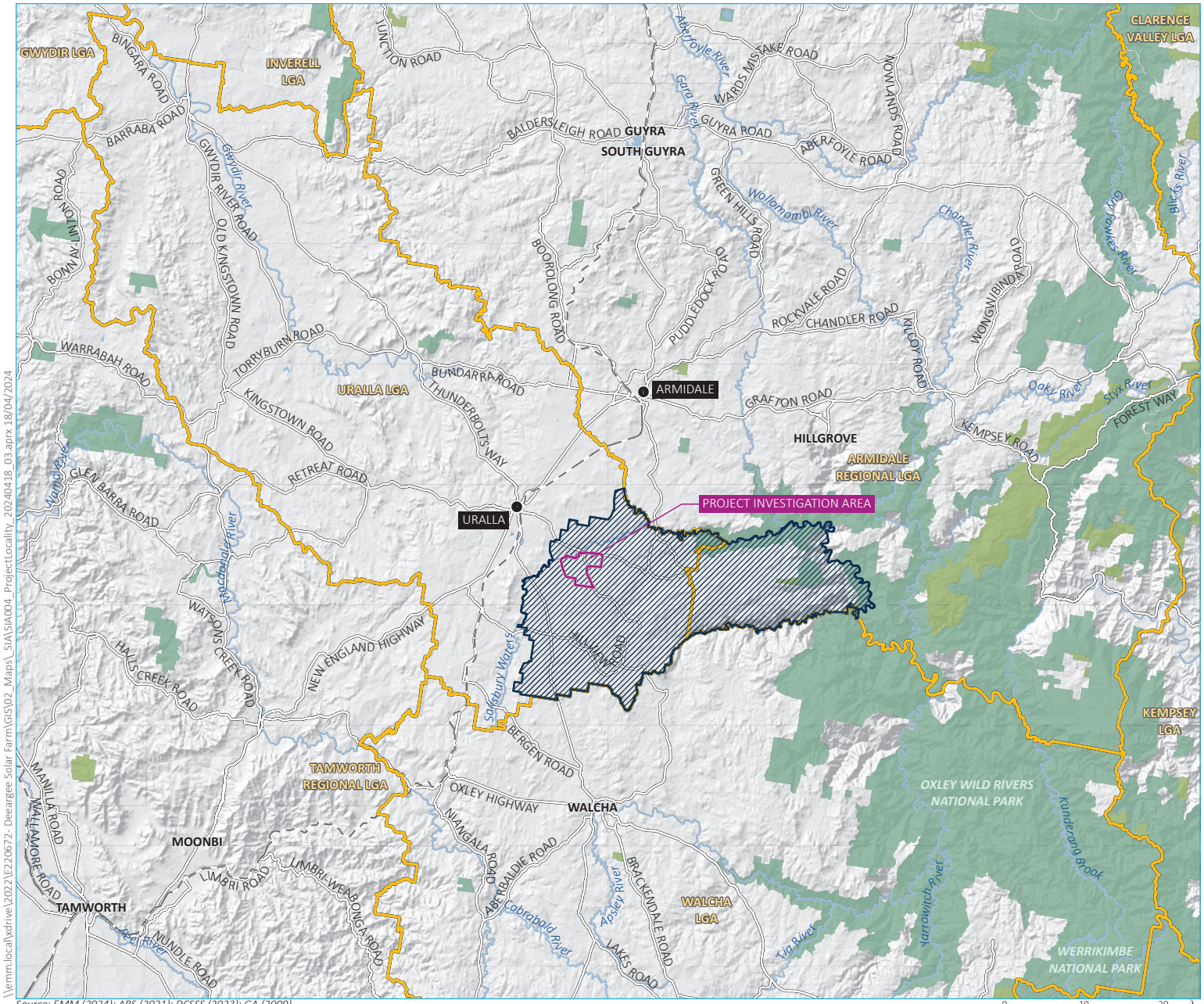
Table A.1 (Annexure A) outlines the known details of other proposed major projects and existing renewable projects within approximately 65 km of the project and the likely cumulative social impact considerations.

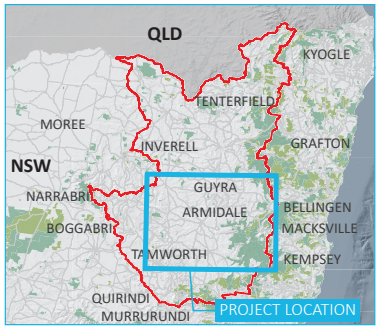
Table 3.2 provides a preliminary assessment of the projects most likely to contribute to cumulative social impacts.

Table 3.2 Regional development context

Project name	Distance from the project	Key characteristics
New England Solar	6 km north	Stage 1 is operational Stage 2 is under construction
Winterbourne Wind Farm	25 km south-east	30-month timeframe 400 FTE workers during construction
Armidale Battery Energy Storage System	20 km north-east	9-month timeframe 80 FTE workers during construction
Eathorpe Battery Energy Storage System	20 km north-east	9-month timeframe 80 FTE workers during construction
Oxley Solar Farm	21 km north-east	2-year timeframe 300 FTE during construction
Thunderbolt Wind Farm	15 km south-west	24–36-month timeframe 190 FTE during construction

These proposed and existing projects have potential to overlap with the construction and operation of the project, thereby contributing to cumulative social impacts.





KEY

- Project inverstigation area
- Local area
- Key urban area

Existing environment

- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

INSET KEY

- Major road
- New England REZ (regional area of reference)
- NPWS reserve
- State forest

Source: EMM (2024); ABS (2021); DCSSS (2023); GA (2009)

\\emm.local\xdrive\2022\E220672- Deeargee Solar Farm\GIS\02_Maps_SIA\SIA004_ProjectLocality_20240418_03.aprx 18/04/2024

Project social locality

Deeargee Solar Farm
Social Impact Scoping Report
Figure 3.1

EMM
creating opportunities

4 Initial social baseline analysis

This section provides the initial social baseline analysis of the project's social locality. As determined in Section 3.1, the project's social locality comprises the communities of Gostwyck, Salisbury Plains, Mihi and Enmore (local area), the key urban areas of Uralla, Armidale and the Uralla Shire LGA (regional area). Relevant baseline indicators associated with key project activities were outlined in Section 3.

4.1 Policy and planning context

Table 4.1 provides an overview of the social and economic policies and strategies relevant to the project and describes how the project may contribute to, or support, achievement of community goals, aspirations or actions.

Table 4.1 Overview of policy and planning context

Plan, policy or strategy	Description and alignment with the project
State Government	
Staying Ahead: State Infrastructure Strategy 2022–2042 (Infrastructure NSW 2022)	*Staying ahead: State Infrastructure Strategy 2022-2042* sets out the infrastructure needs and priorities over the next 20 years. It looks beyond current projects and identifies policies and strategies needed to provide infrastructure to meet the needs of a growing population and economy and provides 57 recommendations based around 9 long-term objectives. The strategy highlights the importance of private infrastructure investment and encourages the alignment of public funding with private investment. As outlined in the strategy, the ongoing high levels of investment into public infrastructure pose a risk of shortages in materials, which can hinder the progress of infrastructure projects. By ensuring a steady supply of construction materials, the project can play a critical role in mitigating this risk and supporting the overall goals of the strategy.
New England North West Regional Plan 2041 (NSW Government 2022)	The *New England North West Regional Plan 2041* guides land use planning priorities and decision making in the New England North West region for the next two decades. The vision identifies the New England North West region as a leader for sustainable and cost-effective electricity production, as well as looking to support the agricultural industry and expand the food processing sector. The plan highlights the objectives of leading renewable energy technology and investment and leveraging new and upgraded infrastructure. The project is aligned with key objectives within the plan and will contribute to the diversification of the energy sector while strengthening the region's economy.
Local Government	
Uralla Shire Community Strategic Plan 2022–2031 (CSP) (Uralla Shire Council 2022)	The overarching aspiration of the CSP is that the "community will be vibrant with a growing economy supporting a sustainable quality of life that values its heritage". Four community foundations underpin the CSP, with those relevant to the project being: economic prosperity; custodians of the natural environment; growing and diversifying employment, through growth in existing, and new businesses; and a community that is well serviced with essential infrastructure. The project will contribute to several strategies outlined in the CSP, such as through supporting local business development by prioritising local purchasing and working with Uralla Shire Council to develop programs that support the community's needs.
Uralla Shire Local Strategic Planning Statement (LSPS) (Uralla Shire Council 2021)	The Uralla shire LSPS outlines plans for the Uralla shire community's economic, social and environmental land use needs to 2040, and identifies the renewable energy industry as a high value industry opportunity for the region. Actions include "Identify potential solar and wind energy clusters to support the production of renewable energy in appropriate locations in proximity to TransGrid infrastructure." The project will contribute to the growth of renewable energy generation in the region.

Table 4.1 Overview of policy and planning context

Plan, policy or strategy	Description and alignment with the project
Armidale Plan 2040: Final Report (CM+ 2020)	The *Armidale Plan 2040* (CM+ 2020) combines the strategies, precinct and master plans developed in recent years to set in place a coherent and holistic vision for the future of Armidale Regional Council. Through the encouragement of considered growth, innovative business, and employment opportunities, the plan aims to empower the community, and acknowledge, support, and grow the existing capacity, assets, and resources within the region. The project will offer employment and business opportunities that will assist with Armidale Regional Council's aspirations to: • provide opportunities for the younger generation to stay in Armidale • ensure established businesses can grow • create an environment that attracts new businesses and industries, and expands the employment base • to adapt to climate change while achieving sustainability to embrace new and emerging technologies, and incorporate renewable energy initiatives.
Armidale Regional Council Local Strategic Planning Statement (LSPS) (Armidale Regional Council 2020)	The LSPS sets out the 20-year vision for land use in the Armidale area, to meet social, economic and environmental needs and identifies planning priorities including "investigate potential opportunities for development of renewable energy production facilities". The project will contribute to the growth of renewable energy generation in the region.
Advancing Our Region: Your Community Plan 2022 – 2032 (Armidale Regional Council 2022)	The *Advancing Our Region: Your Community Plan 2022–2032* sets out the vision and goals for the Armidale region. It is a 10-year plan that aims to clearly identify the community's main priorities and future aspirations, and the strategies required to achieve them. Outcomes and recommendations of this SIA are proposed in alignment with the goals and strategies of the plan, including: • Goal: A clean, green, and responsible region – Strategy: Promote and increase use of renewable resources and alternative energy sources – Strategy: Collect, handle, dispose, recycle and reuse waste responsibly and innovatively – Strategy: Create a cleaner, healthier environment with good air quality – Strategy: Ensure the community is provided with safe and accessible water that is sustainably managed now and into the future
Armidale City Activation Plan (McGregor Coxall 2018)	The *Armidale City Activation Plan* is the response of Armidale City to the New England North West Regional Plan 2036, where it is identified as a target area of growth (alongside Tamworth). As such, the plan prioritises the frameworks for identifying and reinforcing future opportunities in these cities by adopting an enquiry by design approach. This is a process of urban investigation and consultation with key stakeholders. Notably, while the plan focuses especially on protecting the community's cultural, recreational, and economic activity, it also stresses that increased activity may put pressure on existing infrastructure. It recognises the potential need for additional social amenities, and attention to its connectivity and access issues.

4.2 Community profiles

Community profiles provide a qualitative description of an area or community, including a discussion of key trends and issues (Vanclay, et al. 2015). Section 4.2.1 provides a community profile for the localities within the local area and Section 4.2.2 provides a profile for each of the key regional centres.

Key social trends and characteristics of each community are identified by comparing population, dwelling and labour force indicators to those for the New England REZ as a whole. NSW data has also been used as a basis for comparison, where it enables contextualisation of local, regional or REZ level trends.

Data on population, dwellings and labour force for the local area is provided in Annexure B. Data on population, dwellings and labour force for the key urban areas is provided in Table B.1 in Annexure B.

4.2.1 Local area

The local area is within the Aboriginal language group boundary of the Nganyaywana, also known as the Anaiwan. It is also within the NSW Local Aboriginal Land Council boundary of Armidale LALC.

The local area borders the Macleay River and Enmore State Forest to the east. A small section of Oxley Wild Rivers National Park is within the local area. The eastern section includes Mount Hannah to the north, and Blue Nobby Mountain and Mount Crow to the east.

The local area takes in a number of sparsely populated localities including Gostwyck, Salisbury Plains, Mihi and Enmore, home to a collective population of 142 people, and with a median age of 55 years. Predominant settlement features of the local area include cattle farming operations and rural homesteads.

Relative to the New England REZ, the population of the local area is typically older with a high proportion of adults (people aged 25 to 64 years), fewer children, more households earning less than $650 per week, a higher rate of home ownership, and a higher labour force participation rate (ABS 2021a). Personal and household incomes in the local area are in line with the NSW average.

The local area had a lower unemployment rate compared to the New England REZ. Consistent with land use characteristics, the top industry of employment in the local area is agriculture, including sheep-beef cattle farming and beef cattle farming.

The local area also recorded a higher proportion of residents engaged in voluntary work, with over 40% of residents indicating that they volunteered in the year at the 2021 Census, compared with 18% recorded for the New England REZ. A high rate of volunteering within a community is an indicator of social cohesion and connectedness (AIHW 2021). Arthritis and asthma were the most common long-term health conditions in the local area, otherwise 59% of the population had no long-term health conditions.

Recreational uses of the local area include several hiking tracks in the area including Salisbury Waters walking track, picnic areas and campgrounds.

The local area is restricted by no public transport options.

i Gostwyck

Gostwyck is 10 km south-east of the Uralla township. The Gostwyck area is relatively flat with few gullies, such as Atchesons Gully and Water Gully. There are no social infrastructure or services available in Gostwyck due to the small population, with residents typically travelling to Uralla or Armidale to access services and facilities.

Gostwyck Road traverses the locality from east to west and Hillview Road runs from Gostwyck Road to the south. Salisbury Waters runs through Gostwyck area.

Gostwyck Shire was formerly an LGA before its amalgamation with Uralla in 1948. The predominant industry in Gostwyck is sheep farming.

Deeargee Woolshed, a heritage site, was built in 1872 (Australias Guide 2020). The Deeargee Woolshed is still in use today as a shearing shed. The All Saints Anglican Church Gostwyck Chapel, a gothic-style chapel built in 1921, is located on Gostwyck Road.

ii Salisbury Plains

Salisbury Plains is a small community 16 km south of the Uralla township. The area is relatively flat with some waterways, such as Jacks Creek, Mihi Creek, and Cook Station Creek. In terms of the local road network, the main road is Thunderbolts Way, which connects Salisbury to Uralla and Walcha. Thunderbolts Way converges with two roads in Salisbury: Terrible Vale Road connecting to Terrible Vale and Kentucky and Hillview Road connecting to Gostwyck.

There are no social infrastructure or services available in Salisbury Plains due to the small population, with residents typically travelling to Uralla, Walcha or Armidale to access services and facilities.

4.2.2 Key urban areas

Uralla and Armidale represent the key urban areas for the social locality. Data on population, dwellings and labour force for the key urban areas are provided in Table B.1 in Annexure B.

i Uralla

Uralla is at the intersection of New England Highway and Thunderbolts Way, between the regional cities of Armidale and Tamworth. Uralla had 2,385 residents at the 2021 Census (ABS 2021b), representing a decline in population of 1.5% from the 2016 Census. The median age of Uralla residents is 46 years.

Relative to New England REZ, Uralla township is characterised by an older population with more than one quarter of its residents aged 65 years or older. There are a significantly higher proportion of residents who identify as Aboriginal and/or Torres Strait Islander, a higher proportion of low-income households, a lower rate of labour force participation, and a higher rate of unemployment (ABS 2021b). The key employment industries include education and training, health care and social assistance, and construction.

Uralla township supports sheep farming operations in the surrounding area, with the area renowned for its merino sheep.

Uralla has significant heritage value, with more than 50 buildings and sites of heritage significance. Uralla hosts the popular Seasons of New England Expo, which is an annual celebration of the producers, makers, creators and musicians of the New England region.

ii Armidale

Armidale is a key regional city situated at the junction of the New England Highway and Waterfall Way and on the banks of Dumaresq Creek.

Armidale is a region with a rich Aboriginal past. European settlement of Armidale dates from the 1830s, with the township established in the late 1840s. Land was mainly used for agriculture, particularly grazing and crop growing. At the 2021 Census, Armidale had 23,967 residents, representing an increase of 2.6% from the 2016 Census (ABS 2016; 2021b). The median age of Armidale residents is 36 years.

Relative to New England REZ, Armidale has a higher proportion of youth, a higher proportion of residents who speak a language other than English at home, a lower proportion of home ownership, a higher proportion of social housing, and a higher unemployment rate – including youth unemployment (ABS 2021b).

Armidale is considered the key academic centre in the region and is home to a large number of primary, secondary and tertiary education facilities. The University of New England (UNE) is based in Armidale across several sites, has strong links to the agricultural industry and is one of Armidale's main employers. More than 20% of Armidale's employed residents are employed in the education and training industry (ABS 2021b). Other key industries of employment include health care and social assistance, and retail trade.

Key features of Armidale include the New England Regional Art Museum, the Aboriginal Cultural Centre and Keeping Place, and St Peter's Cathedral. Armidale hosts a number of events and festivals throughout the year including the New England Wool Expo and the Autumn Festival.

Armidale is well connected to public transport options with Armidale Railway Station served by daily passenger trains to and from Sydney and Armidale Airport receiving daily flights to and from Sydney and Brisbane.

4.3 Key social trends

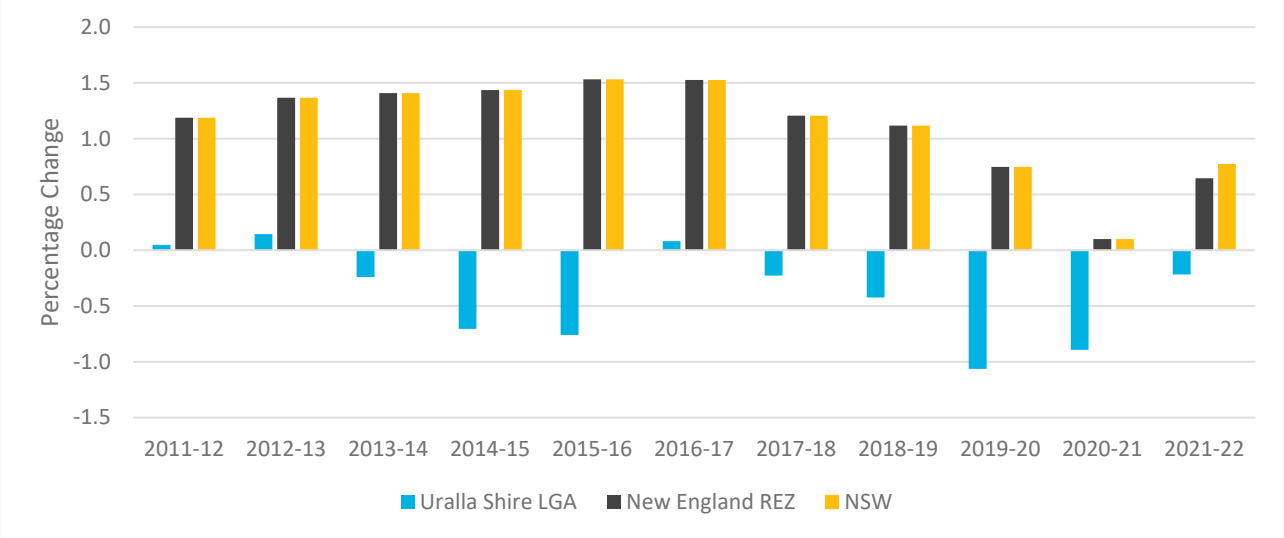
Key social trends in the project's social locality are identified and analysed across broad social themes based on consideration of the scope of potential impacts and opportunities identified in Table 3.1. This section considers key trends and social characteristics as they relate to population, housing, labour force, business and industry, and access and connectivity.

The analysis is principally based on social and demographic data available from the ABS Census and NSW Government, as well as outcomes of community and stakeholder engagement. Key social trends are discussed within the regional area (Uralla Shire LGA) and the New England REZ (area of reference), with reference to trends in the local area and the key urban areas (Uralla and Armidale)

4.3.1 Population trends

Figure 4.1 presents the population trends across the regional study area (Uralla Shire LGA) and area of reference (New England REZ) from 2011 to 2022. This shows that over a general 10-year period, there has been a decline in population across the study area and across NSW since 2017. Between 2017 and 2022, the regional area recorded a population loss of 172 residents.

In 2021, there were an estimated 134,775 residents in the New England REZ, of which 46.7% reside in Tamworth Regional LGA. Population growth in the New England REZ has slowed over the five years to 2021; however, this is comparable to population trends recorded for NSW. Within the New England REZ, population growth peaked in 2016 and 2017, with the population growing by 1.5% per annum. The slowing of population growth, and the decline noted in the regional area, may be attributed to restrictions associated with the COVID-19 pandemic which has reduced migration, including from overseas (Messenger 2022).



Source: Estimated resident population, regional population 2022, ABS.

Figure 4.1 Annual population change - 2011 to 2022

DPHI provide population projections to year 2041. By 2041, the population of the regional area is expected to increase by 1,739 people to 31,352 residents, representing a population increase of 5.9% from 2021 (DPE 2022b). It is noted that DPE population calculations are not aligned with ABS Census findings on the 2021 population.

The population of the New England REZ is also projected to increase by 5.9%, or 7,906 residents, by 2041, with significant population growth expected for Tamworth LGA. Tenterfield LGA and Uralla LGA are projected to experience significant population decline by 2041, with a decline of 24.4% and 20.7%, respectively.

4.3.2 Service availability and community challenges

Understanding service availability and level of community satisfaction can assist to identify gaps in service provision, areas of higher demand, and opportunities for community investment. It also provides insight into what the key challenges, values and opportunities are within the community.

Uralla Shire Council's (2022) CSP identifies community needs such as:

- building connections between villages
- supporting small businesses
- expanding NBN and mobile coverage
- providing opportunities for community transport.

Community engagement from Armidale Regional Council's (2020) LSPS also identified needs such as:

- community facilities, such as libraries, to foster education, culture and a sense of community
- improved access to transport
- infrastructure improvements, especially for roads
- improved recreational facilities for children and young people.

Social services and infrastructure are almost non-existent within the local area, with the exception of All Saints Anglican Church in Gostwyck. As such, Uralla and Armidale are key regional service centres for many surrounding towns.

4.3.3 Community values

Community values are those elements held as important to residents of the local and regional areas for quality of life and wellbeing. Understanding of community values was informed by Uralla Shire Council planning strategies and relevant inputs from the community stakeholder consultation across two project scoping periods (2018 and 2023–2024).

The Uralla Shire Council (2022) CSP noted that the community values its outdoor lifestyle, in particular parks, gardens and open spaces. As such, the community is "proudly rural" and invested in the upkeep of the area's natural features. The community values celebrating, enhancing and protecting the natural environment (Uralla Shire Council 2022). The Uralla Shire Council's LSPS also noted key values and opportunities identified by the community, including:

- the heritage and character of our towns and villages is part of the community's identity
- the area is a sunny and windy location, which is good for renewables

- accessible centres
- affordable alternatives (Uralla Shire Council 2021).

4.3.4 Access and connectivity

The main roads in Uralla LGA include the New England Highway which connects to Tamworth and Armidale. Other primary roads in the local area include Thunderbolts Way, Kingstown Road and Gostwyck Road. The Uralla Shire Council's CSP noted the difficulties with limited public transport in the region, as well as the desire to upgrade road infrastructure and provide consistent road signage throughout the LGA (Uralla Shire Council 2022).

The main roads in Armidale LGA include the New England Highway and Waterfall Way. Waterfall Way provides access to natural features such as gorges, streams, and views in the region. These features attract tourists, particularly travelling from Armidale (Waterfall Way 2023). Overall, Armidale is well connected to public transport options, with Armidale Railway Station served by daily passenger trains to and from Sydney, and Armidale Airport receiving daily flights to and from Sydney and Brisbane.

4.3.5 Local business and industry

Agriculture is the main driver of the economies of the regional area and the New England REZ, with key agricultural activities including livestock, cereal cropping, cotton and wool production (Infrastructure Australia 2022). In 2020, agriculture made up 25% of the Gross Regional Product (GRP) within the New England REZ (Briggs et al 2022). Education is the second largest contributor to GRP, due in part to the University of New England in Armidale and related ancillary services.

The ABS Counts of Australian Businesses register recorded 655 registered businesses in Uralla LGA, and 2,899 registered businesses within Armidale LGA (ABS 2022). The most prevalent industry for registered businesses was the agriculture, forestry and fishing industry. Industries relevant to development of renewable energy projects include construction, electricity, gas, water and waste services, and transport, postal and warehousing. In 2022, Uralla LGA had 95 construction businesses, no electricity, gas, water and waste services, and 33 transport, postal and warehousing businesses. In Armidale LGA, there were 359 construction businesses, 5 electricity, gas, water and waste services businesses, and 128 transport, postal and warehousing businesses (ABS 2022). However, around 98% of registered businesses within both Uralla and Armidale LGA were considered 'small businesses' with less than 20 employees (ABS 2022).

Small businesses typically face barriers in accessing supply chains for large development projects, such as renewable energy projects, due to factors such as compressed timeframes that limit the opportunity for new entrants in the supply chain (Briggs et al 2022). The majority of businesses in the local area are related to agriculture.

4.3.6 Regional development context

4.3.7 Summary of key social trends

The key social trends within the project's social locality are as follows:

- The local area is sparsely populated and is characterised by sheep and cattle farming operations and rural homesteads.
- Strong self-reliance, sense of community and high rates of volunteering.
- Liveability values in the social locality are connected to the natural environment and sense of community.

- Lack of community and health services in the local area. As a result, Uralla and Armidale are key service centres for local area residents. Residents travel to Uralla and Armidale to access groceries, fuel, retail, basic and specialist medical services, education and other community services.
- Slow population growth is a feature of the social locality, where faster rates of growth are seen in the area of reference. The regional area and area of reference have higher numbers of residents who identify as Aboriginal and/or Torres Strait Islander compared to NSW.

5 Community and stakeholder engagement

This SIA Scoping Report has been informed by the outcomes of engagement during current and past consultation periods in the project investigation area. These include:

- community stakeholder engagement undertaken by EMM and ACEN in 2018 for the New England Solar
- community stakeholder engagement undertaken by ACEN to help inform the scoping of social impacts (refer to Chapter 5 of the Scoping Report for further detail).

These inputs are referred to as a secondary data source as they were not undertaken directly by the author of this report. However, the history and depth of local engagement regarding project elements provides a strong foundational evidence base for this scoping exercise.

5.1 Previous engagement outcomes informing project refinements

In 2018, an SIA for New England Solar was prepared by EMM, on behalf of UPC Renewables Australia Pty Ltd (now ACEN). Methods of engagement that informed the EIS and SIA included regular community information and feedback sessions, one-on-one meetings, a project website and informing the local community via letters, project updates and advertisements.

Community concerns and interest areas captured during this consultation included visual amenity impacts, construction and operational noise, construction traffic, changes to rural land use and land use conflicts, reduction of property values, impacts on local businesses and impacts on the natural environment. These concerns were reflected in submissions from the local community following the public exhibition of the EIS.

Of the objections received as part of the community submissions, 29 or 43% focused on the southern array and potential impacts to Salisbury Plains. As a result of ongoing discussions with the local community, project landholders and other stakeholders, the decision was made to remove the southern array area.

Importantly, the Deeargee Solar and Battery Project includes significant revisions to the development footprint proposed as part of the southern array, an increased setback from Thunderbolts Way and the closest receptor, as well as alternative site access points from the local road network.

Section 6.3 describes how these changes are captured as impact avoidance and mitigation.

5.2 Scoping phase engagement

5.2.1 Community stakeholders

Engagement with the community (including near neighbours) has intensified throughout the scoping phase.

In January 2024, ACEN published a project website (https://acenrenewables.com.au/project/deeargee-solar/), dedicated email address (info@deeargeesolar.com.au) and project hotline (1800 864 880). ACEN also undertook targeted phone calls and posted a letter and project fact sheet to all landholders within 4 km of the project investigation area. Community information sessions were held in person in Uralla in February 2024 and ACEN's local office in Uralla is periodically open to drop-ins.

Engagement with immediate neighbours and potentially directly impacted neighbours (i.e. those within an approximately 4 km buffer of the project investigation area) is ongoing through face-to-face meetings, letters, emails and phone calls.

Feedback from the community has been varied and includes both positive and negative views on a range of topics. Responses from community engagement with concerns about the project have included the following:

- Two neighbouring landholders expressed concerns about the loss of prime agricultural land and biophysical strategic agricultural land (BSAL) as a result of the project.
- Two neighbouring landholders expressed concerns about the change to the landscape, including the visual impact of the project and the cumulative effect of multiple projects in the area.
- One local community member expressed concerns about the role renewable projects have in creating divisions between neighbours in the community.

Concerns raised during community engagement will be addressed during ongoing consultation and responses will be summarised in the EIS.

Community members have also communicated their support for the project with one community member commending ACEN's local presence and the timely provision of information to the community about their projects. There is a lot of local interest in the ability to co-locate agriculture and solar energy generation by continuing to graze sheep between PV module rows.

Community engagement will continue to be carried out during the EIS phase in line with ACEN's Community Engagement Plan.

5.2.2 Government and regulatory stakeholders

Government and regulatory stakeholder consultation carried out during the scoping phase is detailed in Table 5.1.

Table 5.1 Summary of stakeholder engagement activities

Stakeholder	Engagement type	Key outcome
DPHI	Scoping meeting	ACEN provided an overview of the project, assessments undertaken to date and engagement outcomes. DPHI asked questions about the project's impacts on BSAL and the workforce accommodation strategy. Further work will be undertaken as part of the EIS to: • verify the land and soil capability class of land within the development footprint • explore opportunities for accommodating the project's workforce that maximise the use of available infrastructure and minimise the number of on-site accommodation facilities built to support New England REZ infrastructure.
BCS	Meeting Site visit	EMM and Biosis met with BCS to introduce the project and provide an overview of preliminary vegetation mapping and threatened species surveys undertaken during the scoping phase. In response to feedback from BCS, one BESS option has been removed from the development footprint and project layout. The development footprint has also been amended to maximise the use of Category 1 exempt land where possible.
Uralla Shire Council	Meeting	Enquiries and discussions on project location, site access, project schedule and timelines, REZ connection location, community and stakeholder engagement plans, the Voluntary Planning Agreement, and workforce accommodation were held between Uralla Shire Council and ACEN. No concerns were raised by Uralla Shire Council about the project; however, it was noted that Gostwyck Road (access corridor option 1 on Figure 1.1) is not a preferred access route.
EnergyCo	Meeting	ACEN met with EnergyCo to discuss and confirm the proposed location of the study corridor for the New England REZ transmission infrastructure (including East Hub) and potential connection options for the project.

5.3 EIS phase consultation

During the preparation of the EIS, including SIA, ACEN will consult with relevant local, State and Commonwealth Government authorities, infrastructure and service providers, community groups, Traditional Owners and First Nations stakeholders, neighbours and affected landowners.

Engagement to inform the SIA will further explore and verify the social impacts and opportunities identified during the project's scoping phase. The engagement program will also focus on the project's workforce accommodation strategy, the scope of road upgrades, and the project's regional development context.

ACEN is committed to continuing their genuine and consistent engagement with the local community and stakeholders and will maintain their existing relationships with stakeholders to establish a socially sustainable project.

6 Preliminary social impact identification and evaluation

This section presents the preliminary identification and evaluation of social impacts for different groups in the social locality. The preliminary evaluation determines the level at which these impacts need to be assessed during Phase 2 SIA. The initial identification and evaluation of social impacts was facilitated through completion of the SIA scoping worksheet (Annexure C).

6.1 Preliminary social impact identification and evaluation

The identification of potential social impacts and benefits was an iterative process informed by:

- a review of the project description and the social effects they could generate
- analysis of existing baseline socio-economic conditions across the social locality
- stakeholder mapping and analysis of the feedback generated through stakeholder engagement.

Preliminary identification and evaluation of social impacts was further guided through application of the SIA scoping worksheet. The SIA scoping worksheet is a decision support tool which assists in evaluating potential social impacts in order to determine the level of assessment and effort required to address the identified impact as part of the SIA (DPE 2023b).

As defined in the SIA Guideline (DPE 2023b), the level of assessment for each social impact are:

- detailed assessment: the project may result in significant social impacts, including cumulative impacts
- standard assessment: the project is unlikely to result in significant social impacts, including cumulative impacts
- minor assessment: the project may result in minor social impacts
- not relevant: the project will have no social impacts, or the social impacts of the project will be so small that they do not warrant consideration.

To determine the level of assessment for each social impact, a preliminary impact significance evaluation is undertaken by determining the likelihood and magnitude of the potential impact. The significance levels of an impact are low, medium, high, and very high, with each impact significance rating applied to a level of assessment:

- Impacts assigned a significance rating of ‘high’ or ‘very high’ require a detailed assessment.
- Impacts assigned a significance rating of ‘medium’ require a standard assessment.
- Impacts assigned a significance rating of ‘low’ require a minor assessment.

The significance ratings identified are based on preliminary investigations and current understanding of the potential social impacts, prior to any mitigation measures being applied. The impact significance ratings will be revised in the Phase 2 SIA that will accompany the EIS.

A summary of outcomes of the SIA scoping worksheet (Annexure C) is provided in Table 6.1.

Table 6.1 Preliminary social impact evaluation

Social impact	Impact category	Project phase[1]	Affected stakeholder group	Preliminary impact significance			Existing and potential mitigation measures	Phase 2 assessment level
				Likelihood	Magnitude	Impact significance		
Negative impact								
Changes to the visual landscape	Community Surroundings	C, O	• Neighbouring landowners • Local road users	Likely (B)	Moderate (3)	High (B3)	• Ongoing engagement with neighbouring landowners to inform project refinements. • Screening where impacts are unavoidable.	Detailed
Potential disruption to agricultural operations due to establishment of project infrastructure, changes to land use and changes to access.	• Surroundings • Livelihoods	C, O	• Neighbouring landowners	Likely (B)	Moderate (3)	High (B3)	• Neighbour agreements reached as a mitigation and/or offset to anticipated impacts. • Regular updates on schedule and changes to access for neighbouring landowners planning purposes. • Communication program in place with landholders and neighbours during construction activities • Grazing protocols in place with landholders	Detailed
Reduced agricultural productivity due to increase in biosecurity risk from introduction of weeds.	• Livelihoods	C, O	• Neighbouring landowners	Possible (C)	Moderate (3)	Medium (C3)	• Implement control measures such as vehicle wash down protocols and facilities. • Grazing protocols in place with landholders	Standard
Reduced rural lifestyle values due to land clearing and associated loss of fauna habitat.	• Community • Surroundings	C, O	• Neighbouring landowners • Local community	Possible (C)	Moderate (3)	Medium (C3)	• Changes to project design and layout to avoid known habitats based on feedback from early engagement with neighbouring landowners and biodiversity surveys. • Establishment of local stewardship sites to retire biodiversity offsets. • Capacity-building or resourcing support for local environmental restoration and protection programs.	Standard
Deterioration of residential amenity due to the generation of noise and dust.	• Health and wellbeing	C, O, DC	• Neighbouring landowners • Local community	Likely (B)	Moderate (3)	High (B3)	• Ongoing engagement with local community and key stakeholders. • Changes to project design and layout to reduce noise levels at residences. • Ongoing monitoring and suppression of dust as required.	Detailed
Increased competition for construction labour and services due to increased demand generated by the project.	• Livelihoods	C	• Local communities • Regional communities • Local government • Local economic and industry groups	Likely (B)	Major (4)	High (B4)	• Provision of employment and training opportunities for local people including young people and First Nations peoples. • Commitment to use local contractors and suppliers.	Detailed
Reduced community cohesion due to perceived inequitable distribution of project benefits.	• Community • Decision-making systems	PC, C, O	• Neighbouring landowners • Local communities • Local government • Community groups	Possible (C)	Minor (2)	Medium (C2)	• Ongoing engagement with local community and key stakeholders as the project progresses. • Social Investment Program during development and construction • Planning Agreement with Council	Standard
Disruption to access and connectivity on local and regional road network from increased heavy vehicle and workforce traffic.	• Way of life • Accessibility • Surroundings	C, DC	• Neighbouring landowners • Local communities • Regional communities	Almost certain (A)	Moderate (3)	High (A3)	• Upgrades to the local road network (where required). • Provision of support for local road maintenance through a Voluntary Planning Agreement (VPA) or similar. • Ongoing engagement with local community and key stakeholders. • Notifications for community members advising of road closures or traffic disruptions.	Detailed
Perceived devaluation of adjacent or nearby properties.	• Way of life • Livelihoods	PC, C, O	• Neighbouring landowners • Landowners • Local communities	Possible (C)	Minor (2)	Medium (C2)	• Neighbour agreements reached as a mitigation and/or offset to anticipated impacts. • Ongoing engagement with neighbouring landowners including provision of property valuation data from similar projects.	Standard

[1] PC: pre-construction, C: construction, O: operations, DC: decommissioning.

Table 6.1 Preliminary social impact evaluation

Social impact	Impact category	Project phase[1]	Affected stakeholder group	Preliminary impact significance			Existing and potential mitigation measures	Phase 2 assessment level
				Likelihood	Magnitude	Impact significance		
Reduced community cohesion due to influx of construction workers.	• Community	C	• Local communities • Local government • Community groups	Possible(C)	Moderate (3)	High (A3)	• Development and effective implementation of a Community Engagement Plan including initiatives which contribute to maintaining social cohesion in the local area. • Collaborate and engage with local councils and EnergyCo to develop a suitable housing and accommodation strategy for the construction workforce.	Detailed
Increased demand for social and community infrastructure due to influx of construction workers.	• Community • Accessibility	C	• Social infrastructure providers and community services • Local government • Local communities • Regional communities	Possible (C)	Major (4)	High (B4)	• Establishment of a community benefit plan for the project that supports community infrastructure and service provision. • Suitable temporary workforce accommodation solution that limits demand on community services such as health and emergency services	Detailed
Increased demand for housing (rental) and short-term accommodation due to influx of construction workers.	• Way of life • Community • Accessibility	C	• Social infrastructure providers and community services • Local government • Local communities • Regional communities • Local economic and industry groups	Likely (B)	Major (4)	High (B4)	• Public commitment to identifying suitable accommodation solutions so as not to negatively impact on housing availability and affordability.	Detailed
Diminishment of First Nations cultural values due to disturbance or displacement of Aboriginal heritage sites and/or artefacts.	• Culture	C	• Traditional Owners and Aboriginal communities	Likely (B)	Major (4)	High (B4)	• Map regional Aboriginal cultural heritage values. • Avoid or minimise impacts to Aboriginal cultural heritage through project design. • Effective implementation of an Aboriginal cultural heritage management plan (ACHMP) to avoid or mitigate disturbance to culturally important places, sites or artefacts.	Detailed
Positive impact								
Generation of employment opportunities for local and regional workers, including First Nations peoples and young people.	• Way of life • Health and wellbeing • Livelihoods	C, O	• Local communities • Regional communities • Local economic and industry groups • Traditional Owners and Aboriginal communities	Almost certain (A)	Major (4)	Very High (A4)	• Employment and training opportunities for the local and regional community including young people and First Nations peoples. • Implementation of a First Nations participation strategy or similar. • Provide opportunities for local workers to specialise, re-skill or upskill in collaboration with local training organisations.	Detailed
Generation of supply and procurement opportunities for local and regional businesses.	• Livelihoods	C, O	• Local communities • Regional communities • Local economic and industry groups • Traditional Owners and industry groups	Almost certain (A)	Major (4)	Very High (A4)	• Commitment to use local contractors and suppliers. • Engagement with local industry for planning and readiness purposes. • Strategically target opportunities for local businesses and service providers in supplying to the project.	Detailed
Increased economic diversification of agricultural operations.	• Livelihoods	O	• Host landowner	Possible (C)	Moderate (3)	Medium (C3)	• Agreement with host landowner.	Standard
Enhanced community wellbeing and cohesion due to project investment in infrastructure and community initiatives.	• Community • Health and wellbeing • Decision-making systems	C, O	• Local communities • Regional communities • Local government • Social infrastructure providers and community services • Community groups	Likely (B)	Major (4)	High (B4)	• VPA with Uralla Shire Council addressing road and civil infrastructure. • Social Investment Programme supporting local community events.	Detailed

6.2 Cumulative impacts

There are several operating, approved and proposed major projects in the Uralla LGA and surrounds. Potential cumulative social impacts may include pressures on local housing and accommodation markets, changed traffic conditions due increased traffic on road networks, labour and skills shortages and the loss of landscape and environmental amenity.

It should be acknowledged that the effectiveness of the mitigation and enhancement measures proposed as part of the project will be greatly influenced by the volume of projects within the New England REZ.

6.3 Preliminary mitigation and enhancement measures

As per the SIA Guideline, SIA is an iterative and adaptive process throughout a project's lifecycle. Considerations for measures to manage potentially significant social impacts and/or opportunities associated with the project are summarised below and will be refined during a detailed SIA process:

- refinements to project design and layout based informed by neighbouring landowner engagement
- agreements with host and neighbouring landowners, Uralla Shire Council and NSW Government for specific impact management measures, and broader economic contributions
- an inclusive community engagement plan (see Section 5) to enable timely access to project information, participation in project planning and assessment processes including SIA, and the effective management of stakeholder concerns
- a workforce accommodation strategy that carefully considers the regional development context and avoids increased pressure on local housing access and affordability
- workforce and business development strategies that maximise opportunities for local and First Nations stakeholders to participate in the project and realise legacy value of long-term skill and business capacity outcomes
- investment support for locally-led community initiatives, environmental restoration activities, and regional community development initiatives
- collaboration with EnergyCo and other renewable energy developers across the REZ to ensure that cumulative impacts are well identified, planned for and managed across the project's lifecycle.

7 Conclusion

This report has documented the SIA scoping process for the project as part of the scoping report that will inform the SEARs. This report has provided an initial social baseline analysis including community profiles for the local study area, a summary of engagement, and preliminary social impact identification, evaluation, and mitigation.

The SIA scoping process has identified 18 potential social impacts according to the SIA Guideline, of which more than half will require a detailed assessment during the EIS phase of the project's development. A detailed assessment will focus on the following potentially adverse social impacts:

- amenity impacts during construction (noise, vibration, dust)
- changes to local visual amenity during construction and operations
- disruption to existing agricultural operations and land use
- changes/disruptions to local and regional traffic conditions (access, connectivity, traffic volumes)
- increase in demand for construction labour
- workforce accommodation and supporting social infrastructure and services
- impacts to environment and wildlife values.

Anticipated benefits and opportunities that will require detailed assessment include:

- generation of employment opportunities for local and regional workers, including First Nations peoples and young people
- generation of supply and procurement opportunities for local and regional businesses, including First Nations businesses
- enhanced community wellbeing and cohesion due to ACEN's project commitments and social investment program.

The purpose of this report was to inform the SEARs and the scale and scope of the SIA which is to be prepared as part of the EIS. The SIA will be completed in accordance with the requirements outlined in the SIA Guideline (DPE 2023b) and SIA Technical Supplement 2023 (DPE 2023c) and will involve the following key activities:

- an update of the baseline social profile to ensure that any further data relevant to the impacts identified are obtained
- further identification of, and consultation with, affected communities and vulnerable groups
- an engagement program that addresses the scope of impacts and opportunities identified as part of this scoping phase and will be tailored to reduce risk of consultation fatigue
- a comprehensive assessment and evaluation of social impacts against existing baseline conditions
- development of appropriate benefit enhancement and social impact mitigation measures
- consideration of cumulative impacts in the context of projects within the region.

Acronyms and abbreviations

Table 7.1 Acronyms and abbreviations

Acronym/abbreviation	Meaning
ABS	Australian Bureau of Statistics
ACHMP	Aboriginal Cultural Heritage Management Plan
ASGS	Australian Statistical Georgraphy Standard
BCD	Biodiversity Conservation Service Division
BESS	battery energy storage system
BSAL	biophysical strategic agricultural land
CASA	Civil Aviation Safety Authority
CSP	Community Strategic Plan
DPE	NSW Department of Planning and Environment
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EMM	EMM Consulting Pty Ltd
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
FTE	full time equivalent
GW	gigawatt
GWh	gigawatt hour
ha	hectare
IAIA	International Association for Impact Assessment
IEO	Index of Education and Occupation
IER	Index of Economic Resources
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRSD	Index of Relative Socio-Economic Disadvantage
kV	kilovolt
km	kilometre
LGA	Local Government Area
LSPS	Local Strategic Planning Statement
NSW	New South Wales
m	metres
PV	photovoltaic
REZ	Renewable Energy Zone

Table 7.1 Acronyms and abbreviations

Acronym/abbreviation	Meaning
SAL	Suburb and Localities
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SIA	Social Impact Assessment
SIA Guideline	*Social Impact Assessment Guideline for State Significant Projects*
SIA Technical Supplement	*Technical Supplement: Social Impact Assessment Guideline for State Significant Projects*
VPA	voluntary planning agreement

References

ABS. 2021a. *Census of Population and Housing: General Community Profiles.* Data set. Australian Bureau of Statistics.

ABS. 2021b. *Census of Population and Housing: Indigenous Community Profiles.* Data set. Australian Bureau of Statistics.

ABS. 2022. *Counts of Australian Businesses, including Entries and Exits.* Data set. Australian Bureau of Statistics, 25 August.

Armidale Regional Council. 2022. *Advancing or region: Your Community Plan 2022-2032.* Armdiale Regional Council.

Armidale Regional Council. 2020. *Local Strategic Planning Statement: A Plan for 2040.* Armidale Regional Council.

Australias Guide. 2020. *Deeargee Woolshed.* Accessed September 21, 2023. https://www.australias.guide/nsw/attraction-tour/uralla/uralla/deeargee-woolshed/.

CM+. 2020. *Armidale Plan 2040: Final Report.* Armidale Regional Council. https://ehq-production-australia.s3.ap-southeast-2.amazonaws.com/3a6855ce8b21babafa2668fd68854b0cac1ca42e/original/1603950988/Armidale_Plan_2040_Final_Updated_Report_C1-5_June_2020.PDF_4366e9bad250cf2cace197a92b88694d?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Am.

DPE. 2023a. *SIA Scoping Worksheet.* NSW Department of Planning and Environment.

—. 2023b. "Social Impact Guideline for State Significant Projects." *Department of Planning and Environment.* https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/Policy-and-legislation/Social-Impact-Assessment/SIA-Guideline.pdf.

—. 2023c. "Technical Supplement: Social Impact Assessment Guideline for State Significant Projects." *Department of Planning and Environment.* https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/Policy-and-legislation/Social-Impact-Assessment/SIA-Guideline---Technical-Supplement-2v7.pdf?la=en.

Infrastructure NSW. 2022. *Staying Ahead: State Infrastructure Strategy 2022–2042.* Sydney: Infrastructure NSW. https://www.infrastructure.nsw.gov.au/media/3503/state-infrastructure-strategy-2022-2042-full-report.pdf.

McGregor Coxall. 2018. *Armidale City Activation Plan.* New England Joint Orgnisation.

Messenger, Andrew. 2022. *Armidale population down despite Coronavirus flight from cities: ABS.* 7 April. Accessed March 2, 2023. https://www.armidaleexpress.com.au/story/7681905/armidales-population-drops-during-pandemic-years-abs-stats/.

NSW Government. 2022. *New England North West Regional Plan 2041.* Deartment of Planning and Environment. Accessed June 26, 2023. https://www.planning.nsw.gov.au/sites/default/files/2023-03/new-england-north-west-regional-plan-2041.pdf.

Tamworth Regional Council. 2022. *Blueprint 100 Our Community Plan 2023-2033.* Tamworth Regional Council.

Uralla Shire Council. 2022. *Uralla Shire Community Strategic Plan.* Uralla Shire Council.

Uralla Shire Council. 2021. *Uralla Shire Local Strategic Planning Statement.* Uralla Shire Council.

Vanclay, Frank, Ana Maria Esteves, Ilse Aucamp, and Daniel M. Franks. 2015. *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects.* Fargo, ND: International Association for Impact Assessment.

Waterfall Way. 2023. *Explore Wollomombi.* Accessed March 2, 2023. https://www.mywaterfallway.com.au/wollomombi/.

Annexure A

Proximal project review

EMM
creating opportunities

A.1 Proximal cumulative impacts

Table A.1 Other projects in Uralla LGA and Armidale LGA with potential for cumulative impacts

Project	Distance from Project site	Status	Known workforce requirements and timeframes		Social impact considerations	Likely contribution to project cumulative social impacts
			Construction	Operation		
New England Solar	6 km north	Under construction	36-month timeframe 700 FTE workers	30-year lifespan 15 FTE workers	• Housing demand • Labour demand • Access to and availability of health services • Visual amenity • Traffic and transport	Likely to contribute to cumulative impacts relating to visual amenity impacts.
Winterbourne Wind Farm	25 km south-east	Response to submissions	30-month timeframe 400 FTE workers	30-year lifespan 39 FTE workers	• Housing demand • Labour demand • Access to and availability of health services • Traffic and transport	Likely to contribute to cumulative impacts relating to housing and labour demand impacts as well as traffic along the common transport routes, including Thunderbolts Way.
Thunderbolt Wind Farm	15 km south-west	In progress (IPC)	18–24-month timeframe 190 FTE workers	30-year lifespan 9 FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Likely to contribute to cumulative impacts relating to housing and labour demand impacts.
Eathorpe Battery Energy Storage System	20 km north-east	Preparing EIS	Commencing 2025 12–18-month timeframe 100 FTE workers	20-year lifespan 3 FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Potential to contribute to cumulative social impacts relating to access to housing and services.
Armidale Battery Energy Storage System	20 km north-east	Response to submissions	9-month timeframe 80 FTE workers	20-year lifespan No FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Potential to contribute to cumulative social impacts relating to access to housing and services.

Table A.1 Other projects in Uralla LGA and Armidale LGA with potential for cumulative impacts

Project	Distance from Project site	Status	Known workforce requirements and timeframes		Social impact considerations	Likely contribution to project cumulative social impacts
			Construction	Operation		
Oxley Solar Farm	21 km north-east	Under construction	2-year timeframe 300 FTE	30-year lifespan 5 FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Unlikely to contribute to significant cumulative social impacts as Oxley Solar Farm is anticipated to be operational prior to project construction.
Olive Grove Solar Farm	24 km north-east	Under construction	9-month timeframe	28-year lifespan	• Housing demand • Labour demand • Access to and availability of health services	Unlikely to contribute to significant cumulative social impacts as Olive Grove Solar Farm is anticipated to be operational prior to project construction.
Armidale East Battery Storage System	21 km north-east	Preparing EIS	18-month timeframe	40-year lifespan 5 FTE	• Housing demand • Labour demand • Access to and availability of health services	Potential to contribute to cumulative social impacts relating to access to housing and services.
Oven Mountain Pumped Hydro Energy Storage Project (OMPS)	25 km south-east	Response to submissions	5-year timeframe 822 FTE workers	100+-year lifespan 30-50 FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Potential to contribute to cumulative social impacts relating to access to housing and services.
Doughboy Wind Farm	61 km north-east	Preparing EIS	24-month timeframe 300 FTE workers	30-year lifespan 12 FTE workers	• Housing demand • Labour demand • Access to and availability of health services	Potential to contribute to cumulative social impacts relating to access to housing and services.

Annexure B

Detailed baseline data

EMM
creating opportunities

B.1 Baseline indicators for community profiles

Table B.1 Population, dwelling and labour force indicators – local and regional area

Indicator	Year and data source	Gostwyck and Salisbury Plains (11001118811)	New England REZ	Comparison of rates with New England REZ
Population and socio-cultural indicators				
Population (#)	2021, ABS	142	134,775	-
Identify as Aboriginal and/or Torres Strait Islander (#)	2021, ABS	5	14,173	-
Identify as Aboriginal and/or Torres Strait Islander (%)	2021, ABS	3.5%	10.5%	v
Males (%)	2021, ABS	50.7%	48.8%	^
Females (%)	2021, ABS	49.3%	51.2%	v
Median age (#)	2021, ABS	55	-	-
Aged 14 years or younger (children) (%)	2021, ABS	12.0%	18.7%	v
Aged 15 to 24 years (youth) (%)	2021, ABS	9.2%	12.1%	v
Aged 25 to 64 years (adults) (%)	2021, ABS	63.4%	41.6%	^
Aged 65 years or older (elderly) (%)	2021, ABS	23.9%	21.6%	^
Number of families (#)	2021, ABS	54	34,609	-
Has a need for assistance (%)	2021, ABS	0.0%	6.5%	v
Has a health condition (%)	2021, ABS	32.4%	32.7%	v
Engaged in voluntary work (%)	2021, ABS	35.9%	17.8%	^
Median weekly household income ($)	2021, ABS	1,850	-	-
Completed Year 12 or equivalent (%)	2021, ABS	47.9%	47.3%	^
Households earning less than $650 per week (%)	2021, ABS	35.9%	20.8%	^

Table B.1 Population, dwelling and labour force indicators – local and regional area

Indicator	Year and data source	Gostwyck and Salisbury Plains (11001118811)	New England REZ	Comparison of rates with New England REZ
Lone person households (%)	2021, ABS	16.1%	30.2%	v
Speaks other language at home (%)	2021, ABS	0.0%	5.2%	v
Housing indicators				
Number of private dwellings (#)	2021, ABS	58	57,268	-
Unoccupied dwellings (%)	2021, ABS	0.0%	11.2%	v
Separate house (%)	2021, ABS	89.7%	88.8%	^
Owned outright or with a mortgage (%)	2021, ABS	67.2%	58.5%	^
Rented (%)	2021, ABS	10.3%	29.3%	v
Median rent ($)	2021, ABS	275	-	-
Social housing (%)	2021, ABS	0.0%	12.7%	v
Labour force indicators				
Participates in labour force (#)	2021, ABS	93	61,396	-
Labour force participation rate (%)	2021, ABS	74.4%	56.1%	^
Unemployed persons (#)	2021, ABS	4	3,093	-
Unemployment rate (%)	2021, ABS	4.3%	5.0%	v
Youth unemployment rate (%)	2021, ABS	0.0%	10.0%	v

Indicator	Year and data source	Uralla UCL	Armidale SUA	New England REZ	Comparison of rates with New England REZ	
					Uralla UCL	Armidale SUA
Population (#)	2021, ABS	2,385	23,967	134,775	-	-
	2016, ABS	2,421	23,352	130,199	-	-
Population change over 5 years to 2021 (%)	2016 and 2021, ABS	-1.5%	2.6%	3.5%	v	v
Identify as Aboriginal and/or Torres Strait Islander (#)	2021, ABS	378	1,896	14,173	-	-
Identify as Aboriginal and/or Torres Strait Islander (%)	2021, ABS	15.8%	7.9%	10.5%	^	v
Males (%)	2021, ABS	46.8%	47.4%	48.8%	v	v
Females (%)	2021, ABS	53.5%	52.6%	51.2%	^	^
Median age (#)	2021, ABS	46	36	-	-	-
	2016, ABS	44	34	-	-	-
Aged 14 years or younger (children) (%)	2021, ABS	18.2%	17.8%	18.7%	v	v
Aged 15 to 24 years (youth) (%)	2021, ABS	9.5%	17.3%	12.1%	v	^
Aged 25 to 64 years (adults) (%)	2021, ABS	41.4%	40.1%	41.6%	v	v
Aged 65 years or older (elderly) (%)	2021, ABS	25.3%	18.4%	21.6%	^	v
Number of families (#)	2021, ABS	650	5,594	34,609	-	-
Has a need for assistance (%)	2021, ABS	9.1%	5.4%	6.5%	^	v
Has a long-term health condition (%)	2021, ABS	38.4%	29.9%	32.7%	^	v
Engaged in voluntary work (%)	2021, ABS	20.9%	20.0%	17.8%	^	^
Median weekly household income ($)	2021, ABS	1,106	1,432	-	-	-
Completed Year 12 or equivalent (%)	2021, ABS	44.7%	64.1%	47.3%	v	^
Households earning less than $650 per week (%)	2021, ABS	25.7%	18.8%	20.8%	^	v
Lone person households (%)	2021, ABS	33.1%	32.8%	30.2%	^	^

Indicator	Year and data source	Uralla UCL	Armidale SUA	New England REZ	Comparison of rates with New England REZ	
					Uralla UCL	Armidale SUA
Speaks other language at home (%)	2021, ABS	2.5%	10.4%	5.2%	v	^
Number of private dwellings (#)	2021, ABS	1,125	9,828	57,268	-	-
Unoccupied dwellings (%)	2021, ABS	12.1%	10.5%	11.2%	^	v
Separate house (%)	2021, ABS	89.7%	81.8%	88.8%	^	v
Owned outright or with a mortgage (%)	2021, ABS	61.8%	52.9%	58.5%	^	v
Rented (%)	2021, ABS	27.0%	37.7%	29.3%	v	^
Median rent ($)	2021, ABS	250	290	-	-	-
Social housing (%)	2021, ABS	9.7%	15.3%	12.7%	v	^
Participates in labour force (#)	2021, ABS	1,029	11,030	61,396	-	-
Labour force participation rate (%)	2021, ABS	52.9%	56.0%	56.1%	v	v
Unemployed persons (#)	2021, ABS	61	631	3,093	-	-
Unemployment rate (%)	2021, ABS	5.9%	5.7%	5.0%	^	^
Youth unemployment rate (%)	2021, ABS	12.1%	12.0%	10.0%	^	^

B.2 Baseline indicators for key social trends

Table B.2 Population projections, 2021 to 2041

Locality	2021	2041	Change (#)	Change (%)
Sub-Regional area				
Uralla LGA	5,902	4,680	-1,223	-20.7
Regional (New England REZ)				
Tenterfield Shire LGA	6,397	4,834	-1,563	-24.4
Glen Innes Severn	8,880	8,963	83	0.9
Inverell	17,756	17,581	-175	-1.0
Armidale LGA	29,612	31,352	1,739	5.9
Uralla LGA	5,902	4,680	-1,223	-20.7
Tamworth Regional LGA	62,769	71,956	9,187	14.6
Walcha LGA	3,046	2,904	-142	-4.7
Total New England REZ	**134,362**	**142,270**	**7,906**	**5.9**
State				
NSW	8,166,757	9,872,934	1,706,176	20.9

Source: DPE (2022b).

Table B.3 Housing affordability, 2016 and 2021

LGA	Median weekly rent			Renter households with rent payments greater than 30% of household income (%)		Owner with mortgage households with mortgage repayments greater than 30% of household income (%)	
	2016	2021	Change, 2016 to 2021	2016	2021	2016	2021
Sub-regional area							
Uralla LGA	$190	$250	$60	7.1%	29.0%	6.5%	10.3%
Regional (New England REZ)							
Tenterfield Shire LGA	$180	$240	$60	8.6%	36.5%	4.4%	15.5%
Glen Innes Severn LGA	$200	$220	$20	10.5%	37.8%	5.1%	13.9%
Inverell Shire LGA	$210	$260	$50	10.8%	31.9%	4.9%	11.1%
Armidale Regional LGA	$250	$285	$35	14.0%	35.3%	4.1%	10.7%
Uralla LGA	$190	$250	$60	7.1%	29.0%	6.5%	10.3%
Tamworth LGA	$260	$300	$40	11.1%	32.8%	5.3%	10.7%
Walcha LGA	$148	$200	$32	5.8%	26.0%	3.3%	16.3%
State							
NSW	$380	$420	$40	12.9%	35.5%	7.4%	17.3%

Source: ABS (2016); ABS (2021b).

Table B.4 Top three industries of employment, 2021

Area	First	%	Second	%	Third	%
Local area						
Gostwyck and Salisbury Plains (11001118811)	Agriculture, forestry and fishing	36.6%	Retail trade	5.6%	Education and training	4.2%
Key urban areas						
Uralla UCL	Education and training	15.1%	Health care and social assistance	14.6%	Construction	10.7%
Armidale SUA	Education and training	21.6%	Health care and social assistance	16.2%	Retail trade	9.4%
Sub-regional area						
Uralla LGA	Agriculture, forestry and fishing	15.2%	Education and training	14.4%	Health care and social assistance	13.6%
Regional Area						
New England REZ	Health care and social assistance	15.5%	Education and training	11.8%	Agriculture, forestry and fishing	10.3%

Table B.5 Population, dwelling and labour force indicators – regional area

Indicator	Year and data source	Uralla LGA	New England REZ	Comparison of rates with New England REZ
Population and socio-cultural indicators				
Population (#)	2021, ABS	5,971	134,775	-
	2016, ABS	6,048	130,199	-
Population change over 5 years to 2021 (%)	2016 and 2021, ABS	-1.3%	3.5%	v
Identify as Aboriginal and/or Torres Strait Islander (#)	2021, ABS	569	14,173	-
Identify as Aboriginal and/or Torres Strait Islander (%)	2021, ABS	9.5%	10.5%	v
Males (%)	2021, ABS	48.3%	48.8%	v
Females (%)	2021, ABS	51.7%	51.2%	^
Median age (#)	2021, ABS	47	-	-
	2016, ABS	46	-	-
Aged 14 years or younger (children) (%)	2021, ABS	17.6%	18.7%	v
Aged 15 to 24 years (youth) (%)	2021, ABS	10.1%	12.1%	v
Aged 25 to 64 years (adults) (%)	2021, ABS	44.3%	41.6%	^
Aged 65 years or older (elderly) (%)	2021, ABS	23.1%	21.6%	^
Number of families (#)	2021, ABS	1,666	34,609	-
Has a need for assistance (%)	2021, ABS	6.7%	6.5%	^
Has a long-term health condition	2021, ABS	34.6%	32.7%	^
Engaged in voluntary work (%)	2021, ABS	23.3%	17.8%	^
Median weekly household income ($)	2021, ABS	1,346	-	-

Table B.5 Population, dwelling and labour force indicators – regional area

Indicator	Year and data source	Uralla LGA	New England REZ	Comparison of rates with New England REZ
Completed Year 12 or equivalent (%)	2021, ABS	49.4%	47.3%	^
Households earning less than $650 per week (%)	2021, ABS	19.8%	20.8%	v
Lone person households (%)	2021, ABS	26.4%	30.2%	v
Speaks other language at home (%)	2021, ABS	2.4%	5.2%	v
Housing indicators				
Number of private dwellings (#)	2021, ABS	2,586	57,268	-
Unoccupied dwellings (%)	2021, ABS	11.6%	11.2%	^
Separate house (%)	2021, ABS	95.4%	88.8%	^
Owned outright or with a mortgage (%)	2021, ABS	67.9%	58.5%	^
Rented (%)	2021, ABS	17.6%	29.3%	v
Median rent	2021, ABS	250	-	-
Social housing (%)	2021, ABS	6.9%	12.7%	v
Labour force indicators				
Participates in labour force (#)	2021, ABS	2,806	61,396	-
Labour force participation rate (%)	2021, ABS	57.1%	56.1%	^
Unemployed persons (#)	2021, ABS	115	3,093	-
Unemployment rate (%)	2021, ABS	4.1%	5.0%	v
Youth unemployment rate (%)	2021, ABS	9.1%	10.0%	v

Table B.6 Population, dwelling and labour force indicators – New England REZ

Indicator	Year and data source	Tenterfield LGA	Glen Innes Severn LGA	Inverell Shire LGA	Armidale Regional LGA	Uralla LGA	Tamworth Regional LGA	Walcha LGA	Total New England REZ	NSW
Population and socio-cultural indicators										
Population (#)	2021, ABS	6,810	8,931	17,853	29,124	5,971	63,070	3,016	6,810	8,072,163
	2016, ABS	6,628	8,836	16,483	29,449	6,048	59,663	3,092	6,628	7,480,228
Population change over 5 years to 2021 (%)	2016 and 2021, ABS	2.7%	1.1%	8.3%	-1.1%	-1.3%	5.7%	-2.5%	2.7%	7.9%
Identify as Aboriginal and/or Torres Strait Islander (#)	2021, ABS	514	677	1,975	2,205	569	8,032	201	514	278,043
Identify as Aboriginal and/or Torres Strait Islander (%)	2021, ABS	7.5%	7.6%	11.1%	7.6%	9.5%	12.7%	6.7%	7.5%	3.4%
Males (%)	2021, ABS	49.0%	49.4%	49.2%	48.1%	48.3%	49.0%	50.3%	49.0%	49.4%
Females (%)	2021, ABS	51.1%	50.6%	50.8%	51.9%	51.7%	51.0%	49.8%	51.1%	50.6%
Median age (#)	2021, ABS	55	50	43	37	47	39	50	55	39
	2016, ABS	53	47	42	36	46	40	48	53	38
Aged 14 years or younger (children) (%)	2021, ABS	14.0%	15.3%	19.2%	18.0%	17.6%	20.1%	16.9%	14.0%	18.2%
Aged 15 to 24 years (youth) (%)	2021, ABS	8.1%	9.5%	11.3%	16.0%	10.1%	11.8%	8.8%	8.1%	11.8%
Aged 25 to 64 years (adults) (%)	2021, ABS	41.3%	42.4%	41.2%	40.9%	44.3%	41.8%	40.4%	41.3%	52.3%
Aged 65 years or older (elderly) (%)	2021, ABS	32.8%	28.3%	22.8%	19.0%	23.1%	19.9%	29.3%	32.8%	17.6%
Number of families (#)	2021, ABS	1,800	2,271	4,607	6,896	1,666	16,549	820	1,800	2,135,964
Has a need for assistance (%)	2021, ABS	8.1%	8.0%	7.0%	5.2%	6.7%	6.7%	5.3%	8.1%	5.8%
Has a long-term health condition	2021, ABS	36.9%	35.7%	31.9%	29.6%	34.6%	33.3%	32.5%	36.9%	27.0%

Table B.6 Population, dwelling and labour force indicators – New England REZ

Indicator	Year and data source	Tenterfield LGA	Glen Innes Severn LGA	Inverell Shire LGA	Armidale Regional LGA	Uralla LGA	Tamworth Regional LGA	Walcha LGA	Total New England REZ	NSW
Engaged in voluntary work (%)	2021, ABS	22.2%	19.3%	16.5%	20.0%	23.3%	15.5%	26.1%	22.2%	13.0%
Median weekly household income ($)	2021, ABS	885	934	1,163	1,404	1,346	1,416	1,224	885	1829%
Completed Year 12 or equivalent (%)	2021, ABS	39.4%	38.7%	39.7%	61.6%	49.4%	45.0%	43.7%	39.4%	63.3%
Households earning less than $650 per week (%)	2021, ABS	32.1%	29.2%	22.7%	19.0%	19.8%	18.4%	23.8%	32.1%	15.3%
Lone person households (%)	2021, ABS	35.6%	35.6%	29.2%	32.0%	26.4%	28.5%	30.3%	35.6%	25.0%
Speaks other language at home (%)	2021, ABS	3.0%	2.4%	3.4%	9.1%	2.4%	5.0%	2.2%	3.0%	26.8%
Housing indicators										
Number of private dwellings (#)	2021, ABS	3,591	4,207	7,414	12,055	2,586	25,914	1,501	3,591	3,199,988
Unoccupied dwellings (%)	2021, ABS	19.9%	13.8%	10.6%	11.8%	11.6%	8.9%	21.4%	19.9%	9.4%
Separate house (%)	2021, ABS	94.7%	92.3%	90.7%	84.3%	95.4%	88.1%	94.8%	94.7%	65.6%
Owned outright or with a mortgage (%)	2021, ABS	59.5%	60.4%	60.0%	54.0%	67.9%	59.1%	54.9%	59.5%	64.0%
Rented (%)	2021, ABS	18.2%	24.5%	27.3%	34.7%	17.6%	31.1%	19.9%	18.2%	32.6%
Median rent ($)	2021, ABS	240	220	260	285	250	300	200	240	-
Social housing (%)	2021, ABS	15.5%	11.0%	14.2%	14.3%	6.9%	11.9%	12.8%	15.5%	12.8%

Table B.6 Population, dwelling and labour force indicators – New England REZ

Indicator	Year and data source	Tenterfield LGA	Glen Innes Severn LGA	Inverell Shire LGA	Armidale Regional LGA	Uralla LGA	Tamworth Regional LGA	Walcha LGA	Total New England REZ	NSW
Labour force indicators										
Participates in labour force (#)	2021, ABS	2,611	3,564	7,534	13,482	2,806	29,980	1,419	61,396	3,874,012
Labour force participation rate (%)	2021, ABS	44.6%	47.1%	52.2%	56.5%	57.1%	59.5%	56.6%	56.1%	58.7%
Unemployed persons (#)	2021, ABS	183	227	469	715	115	1,341	43	3,093	189,852
Unemployment rate (%)	2021, ABS	7.0%	6.4%	6.2%	5.3%	4.1%	4.5%	3.0%	5.0%	4.9%
Unemployment rate (%)	Sept qtr 2022, LMIP	-	-	-	-	-	-	-	6.5%	3.3%
Youth unemployment rate (%)	2021, ABS	7.2%	10.6%	11.7%	11.5%	9.1%	9.1%	9.6%	10.0%	9.8%

Annexure C

SIA scoping worksheet

EMM
creating opportunities

Social Impact Assessment (SIA) Worksheet

Project name: Deeargee Solar Farm

Date:

PROJECT ACTIVITIES	CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. **NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row**	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics **extent** i.e. number of people potentially affected?	**duration** of expected impacts? **(i.e. construction vs operational phase)**	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity or vulnerability** of people potentially affected?	**level of concern/interest** of people potentially affected?	Level of assessment for each social impact	What methods and data sources will be used to investigate this impact? Secondary data	Primary Data - Consultation	Primary Data - Research	**Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?**	What **mitigation / enhancement measures** are being considered?
Free Text	Categories in SIA guideline	Free text	Positive Negative	Yes - this project, Yes - other project, No	Free text	Combined Cumulative Cumulative Combined and Cumulative No Unknown N/A		Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Detailed, Standard, Minor, Nothing further on this impact	Free Text			Yes No	Free Text
Construction, Operation	Community; Surroundings	**Changes to the visual landscape**	Negative	**Yes - other project**	Winterbourne Wind Farm SIA, Thunderbolt Wind Farm SIA,	Yes	Increased presence of in renewable energy projects in REZ is likely to exacerbate perceptions of risk to the visual landscape. Nearby projects include New England Solar, Winterbourne Wind Farm and Thunderbolt Wind Farm. Visual impact assessment.	Yes	Yes	Yes	Yes	Yes	Detailed	Required - Visual Amenity Assessment	Targeted SIA consultation	Targeted research	Yes	Ongoing engagement with neighbouring landowners to inform project refinements. Screening where impacts are unavoidable.
Construction, Operation	Surroundings; Livelihoods	Potential disruption to agricultural operations due to establishment of project infrastructure, changes to land use and changes to access	Negative	**Yes - other project**	New England Solar, Winterbourne Wind Farm SIA, Thunderbolt Wind Farm SIA,	No	New England Solar, visual impact assessment, noise impact assessment	No	Yes	No	Yes	Yes	Detailed	Required	Targeted SIA consultation	Targeted research	No	Neighbour agreements reached as a mitigation and/or offset to anticipated impacts. Regular updates on schedule and changes to access for neighbouring landowners planning purposes. Communication program in place with landholders and neighbours during construction activities
Construction, Operation	Livelihoods	Reduced agricultural productivity for landholders and neighbours due to increase in biosecurity risk from introduction of weeds	Negative	**Yes - other project**	New England Solar SIA,	No	Visual impact assessment, noise impact assessment	No	Yes	No	No	No	Standard	Required	Broad EIS consultation	Targeted research	No	Implement control measures such as vehicle wash down protocols and facilities. Grazing protocols in place with landholders
Construction, Operation	Community; Surroundings	Reduced rural lifestyle values due to land clearing and associated loss of fauna habitat	Negative	**Yes - other project**	Winterbourne Wind Farm SIA, Thunderbolt Wind Farm SIA,	No	Project biodiversity, surface water and groundwaterand noise impact assessments	Yes	Yes	Yes	Yes	Yes	Standard	Required	Broad EIS consultation	Targeted research	No	Changes to project design and layout to avoid known habitats based on feedback from early engagement with local landowners and biodiversity surveys. Establishment of local stewardship sites to retire biodiversity offsets. Capacity-building or resourcing support for local environmental restoration and protection programs
Construction, Operation,	Health and wellbeing	Deterioration of residential amenity due to the generation of noise and dust	Negative	**Yes - other project**	Winterbourne Wind Farm SIA, Thunderbolt Wind Farm SIA,	Yes	An increased presence of in renewable energy projects in REZ is likely to exacerbate perceptions of risk to health. . Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS	Unknown	No	No	**Unknown**	**Unknown**	Detailed	Required	Broad EIS consultation	Targeted research	No	Ongoing engagement with local community and key stakeholders. Changes to project design and layout to reduce noise levels at residences. Ongoing monitoring and suppression of dust as required.
Construction	Livelihoods	Increased competition for construction labour and services in local and regional areas due to increased demand generated by the project	Negative	**Yes - other project**	New England Solar, Winterbourne Wind Farm,	Yes	Numerous projects are anticipated to be constructed over next 10 years. . Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS	Yes	Yes	Yes	**Yes**	**Yes**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Provision of employment and training opportunities for local people including young people and First Nations peoples. Commitment to use local contractors and suppliers.
Pre-construction, Constr	Community; Decision-making systems	Reduced community cohesion due to perceived inequitable distribution of project benefits	Negative	**Yes - other project**	New England Solar	Yes	Numerous projects are anticipated to be constructed over next 10 years.	Yes	Yes	No	**Yes**	**Yes**	Standard	Required	Broad EIS consultation	Targeted research	No	Ongoing engagement with local community and key stakeholders as the project progresses. Social Investment Program during development and construction Planning Agreement with Council
Construction, Decomissic	Way of life; Accessibility; Surroundings	Disruption to access and connectivity on local and regional road network from increased heavy vehicle and workforce traffic.	Negative	**Yes - other project**	New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm SIA,	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm,	Yes	Yes	**Unknown**	**Unknown**	**Unknown**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Upgrades to the local road network (where required). Provision of support for local road maintenance through a Voluntary Planning Agreement (VPA) or similar. Ongoing engagement with local community and key stakeholders. Notifications for community members advising of road closures or traffic disruptions.
Pre-construction, Constr	Way of life; Livelihoods	Percevied devaluation of adjacent or nearby properties	Negative	**Yes - other project**	Thunderbolt Wind Farm SIA,	No		No	Unknown	Unknown	**Unknown**	**Unknown**	Standard	Required	Broad EIS consultation	Targeted research	No	Neighbour agreements reached as a mitigation and/or offset to anticipated impacts. Ongoing engagement with nearby landowners including provision of property valuation data from similar projects.
Construction	Community	Reduced community cohesion due to influx of construction workers.	Negative	**Yes - other project**	Winterbourne Wind Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. earby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS,	Yes	Yes	Yes	**Yes**	**Unknown**	Detailed	Required	Broad EIS consultation	Targeted research	No	Development and effective implementation of a Community Engagement Plan including initiatives which contribute to maintaining social cohesion in the local area. Collaborate and engage with local councils and EnergyCo to develop a suitable housing and accommodation strategy for the construction workforce.
Construction	Community; Accessibility	Increased demand for social and community infrastructure due to influx of construction workers	Negative	**Yes - other project**	SIAs for New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS, Armidale BESS , Oxley Solar Farm, Olive Grove Solar Farm , Armidale East BESS, Oven Mountain Pumped Hydro	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS, Armidale BESS, Oxley Solar Farm, Olive Grove Solar Farm , Armidale East	Yes	Yes	Yes	**Yes**	**Unknown**	Detailed	Required	Broad EIS consultation	Targeted research	No	Establishment of a community benefit plan for the project that supports community infrastructure and service provision. Suitable temporary workforce accommodation solution that limits demand on community services such as health and emergency services
Construction	Way of life; community; accessibility	Increased demand for housing (rental) and short-term accommodation due to influx of construction workers	Negative	**Yes - other project**	New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS, Armidale BESS, Oxley Solar Farm, Olive Grove Solar Farm , Armidale East BESS, Oven Mountain Pumped Hydro	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe Battery Energy Storage System, Armidale Battery Energy Storage System , Oxley	Yes	Yes	Yes	**Yes**	**Yes**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Public commitment to identifying suitable accommodation solutions so as not to negatively impact on housing availability and affordability.
Construction	Culture	Diminishment of First Nations cultural values due to disturbance or displacement of Aboriginal heritage sites and/or artefacts.	Negative	No	Winterbourne Wind Farm SIA	No	The nearest project is the New England Solar Farm (20 km from project) which did not identify this matter as a social consideration. Project ACHA will provide further information enabling assessment of cumulative context.	No	Yes	Unknown	**Unknown**	**Unknown**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Map regional Aboriginal cultural heritage values. Avoid or minimise impacts to Aboriginal cultural heritage through project design. Effective implementation of an Aboriginal cultural heritage management plan (ACHMP) to avoid or mitigate disturbance to culturally important places, sites or artefacts
Construction, Operation	Way of life; Health and wellbeing; Livelihoods	Generation of employment opportunities for local and regional workers, including First Nations peoples and young people	Positive	**Yes - other project**	New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS, Armidale BESS, Oxley Solar Farm, Olive Grove Solar Farm , Armidale East BESS, Oven Mountain Pumped Hydro	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS	Yes	Yes	Yes	**Yes**	**Yes**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Employment and training opportunities for the local and regional community including young people and First Nations peoples. Implementation of a First Nations participation strategy or similar. Provide opportunities for local workers to specialise, re-skill or upskill in collaboration with local training organisations.
Construction, Operation	Livelihoods	Generation of supply and procurement opportunities local and regional businesses	Positive	**Yes - other project**	New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS, Armidale BESS, Oxley Solar Farm, Olive Grove Solar Farm , Armidale East BESS, Oven Mountain Pumped Hydro	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS	Yes	Yes	Yes	**Yes**	**Yes**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Commitment to use local contractors and suppliers. Engagement with local industry for planning and readiness purposes. Strategically target opportunities for local businesses and service providers in supplying to the project
Operation	Livelihoods	Enhanced opportunity for economic diversification for agricultural operations.	Positive	No	New England Solar SIA, Winterbourne Wind Farm, SIA	No	New England Solar	No	Unknown	Unknown	**Unknown**	**Yes**	Standard	Required	Broad EIS consultation	Targeted research	No	Agreement with host landowner.
Construction, Operation	Community; Health and wellbeing; Decision-making systems	Enhanced community wellbeing and cohesion due to project investment in infrastructure and community initiatives	Positive	**Yes - other project**	Thunderbolt Wind Farm SIA	Yes	Numerous projects are anticipated to be constructed over next 10 years. Nearby projects include New England Solar, Winterbourne Wind Farm, Thunderbolt Wind Farm, Eathorpe BESS	Yes	Yes	Yes	**Yes**	**Yes**	Detailed	Required	Targeted SIA consultation	Targeted research	No	Voluntary Planning Agreement (VPA) with Uralla Shire Ccouncil addressing road and civil infrastructure. Social Investment Programme supporting local community events.,

Australia

SYDNEY
Ground floor, 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3, 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1, 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA
Level 2, Suite 2.04
15 London Circuit
Canberra City ACT 2601

ADELAIDE
Level 4, 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
188 Normanby Road
Southbank VIC 3006

PERTH
Level 9, Suite 9.02
109 St Georges Terrace
Perth WA 6831

Canada

TORONTO
2345 Yonge Street, Suite 300
Toronto ON M4P 2E5

VANCOUVER
60 W 6th Ave Suite 200
Vancouver BC V5Y 1K1

linkedin.com/company/emm-consulting-pty-limited

emmconsulting.com.au

Australia

SYDNEY
Ground floor, 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3, 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1, 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA
Level 2, Suite 2.04
15 London Circuit
Canberra City ACT 2601

ADELAIDE
Level 4, 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
188 Normanby Road
Southbank VIC 3006

PERTH
Level 9, Suite 9.02
109 St Georges Terrace
Perth WA 6831

Canada

TORONTO
2345 Yonge Street, Suite 300
Toronto ON M4P 2E5

VANCOUVER
60 W 6th Ave Suite 200
Vancouver BC V5Y 1K1

linkedin.com/company/emm-consulting-pty-limited

emmconsulting.com.au