# Scoping Report
# Tamworth Solar Farm

Prepared for: Oriens Energy

ORI-003 Version C

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This Scoping Report has been prepared by PROJECTe on behalf of Oriens Energy (the Applicant).

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# Contents

# Table of Figures



# List of Attachments

# 1 Summary

Oriens Energy (Oriens) proposes to develop a 80 MWp solar farm near Somerton, incorporating battery storage. The location for the project is approximately 25km West of Tamworth, in northeast New South Wales. The proposed site is in an area of agricultural land at 2209 Soldier's Settlement Road, on a single land title of approximately 230 hectares for which Oriens have secured an option to purchase.

The 132kV Tamworth to Gunnedah transmission line crosses over the southern part of the project site. A new substation will be built on site as part of the project, and a connection to the existing transmission line will be made from the new substation.

The proposed project would be classified as State Significant Development as it is an electricity generating activity with a capital investment value of more than $30 million.

This document has been prepared to support a request for Secretary's Environmental Assessment Requirements (SEARs) to be issued, which will guide the preparation of an Environmental Impact Statement (EIS) for the development under Part 4 of the Environmental Planning and Assessment Act (EP&A Act).

The property and surrounding area is mostly flat agricultural land, cleared of native vegetation, with current activities including grazing and rain-fed forage cropping. The project site is land zoned RU1 Primary Production under the Tamworth Regional Local Environmental Plan (LEP) 2010. Under the State Environmental Planning Policy (SEPP) (Infrastructure) 2007, the project is permitted with consent as it is an electricity generating works.

A preliminary environmental assessment was undertaken based on desktop searches and site inspection. Due to strategic and careful site selection, there are relatively few environmental constraints to the site. Potential impacts to biodiversity values, landscape values, and impacts on near neighbors due to visual intrusion, traffic and noise are outlined in this scoping report. During EIS preparation, further investigations will be undertaken and avoidance / mitigation / management options more fully documented.

A community engagement and consultation plan has been prepared for the project. Consultation has commenced in the local area, with landowners, Tamworth Regional council staff and elected members, and Local Land Service staff in surrounding areas. Feedback regarding the proposal from local stakeholders has so far been positive.

Following consideration of this scoping report and consultation with other agencies, it is requested that the DPE provide the Applicant with SEARs in order to proceed with project development.

# 2 Introduction

## 2.1 Overview of project

Oriens Energy (Oriens) proposes to develop a 80 MWp solar farm with battery storage near Somerton, approximately 25km West of Tamworth, in northeast New South Wales. The proposed site is in an area of agricultural land at 2209 Soldier's Settlement Road, on a single land title of approximately 230 hectares for which Oriens have secured an option to purchase.

The 132kV Tamworth to Gunnedah transmission line crosses over the southern part of the project site. A new substation will be built on site as part of the project, and a connection to the existing transmission line will be made from the new substation.

## 2.2 Purpose of this document

Under the SEPP (State and Regional Development) 2011, the proposed project would be classified as State Significant Development as it is an electricity generating activity with a capital investment value of more than $30 million.

This Scoping Report has been prepared to support a request to the New South Wales Department of Planning and Environment (DPE) for Secretary's Environmental Assessment Requirements (SEARs) to be issued, which will guide the preparation of an Environmental Impact Statement (EIS) for the development under Part 4 of the Environmental Planning and Assessment Act (EP&A Act).

This document outlines

- The project description (Section 3)
- Project justification and need (Section 4)
- Consultation undertaken to date and proposed (Section 5)
- Statutory Planning Framework (Section 6)
- Preliminary Environmental Assessment (Section 7)
- Proposed scope of EIS (Section 8)

## 2.3 Oriens Energy

The proponent for this project is Oriens Energy, a newly formed business whose team members individually have over 20 years experience in large scale energy projects across Australia and Internationally. Oriens focus is to bring their engineering and project experience to projects from site identification, through feasibility to completion, ensuring seamless management of all aspects across all stages of the project.

# 3 Project Description

## 3.1 Site location

The site is located at 2209 Soldiers Settlement Road, approximately seven km south of the township of Somerton, and approximately 25km west of Tamworth, in the Tamworth Regional Council Local Government Area. See Figure 1: Regional Contex.

The proposal is contained entirely on a single land title (Lot 186 DP 755340) of private freehold land, and Oriens have secured an option to purchase, if and when project approvals and finance are finalized.

The site is some 2-3km south of the Oxley Highway, and is accessible by local roads managed by Tamworth Regional Council. A proposed 'one-way transport loop' to and from the Oxley Highway is feasible utilizing existing council managed roads. See Figure 2: Proposed transport route.

## 3.2 Site description

The 230 hectare property and surrounding area is mostly flat agricultural land, cleared of native vegetation, with current activities including grazing and rain-fed forage cropping (eg cowpea). There are several scattered, isolated shade trees in poor condition, and a small dam near the existing homestead. The dam will be maintained and the water utilized for dust suppression during construction.

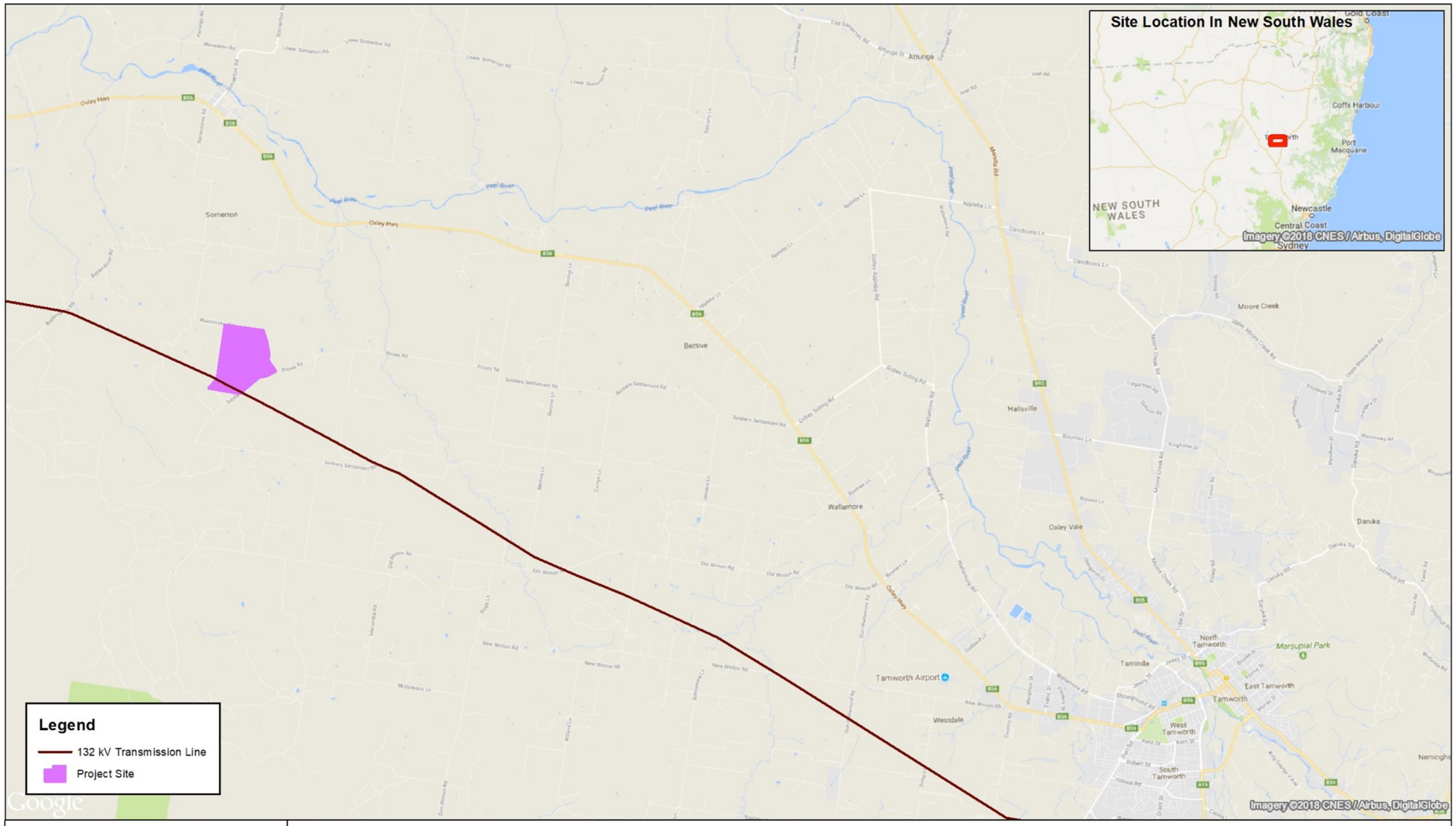
No permanent watercourses cross the property, although evidence from inspection of aerial photos indicate there is an ephemeral drainage line which may carry water during rainfall events. Some agricultural drainage lines and swales have been created to manage water flow across the property.

A potential water bore is evidenced by a wind-mill and stockwater trough area in the centre of the property.

There is an existing residential dwelling on the property, and the construction will benefit from the utilisation and conversion of the existing assets, which will be used as a site office during construction, and maintained as a site administrative office during operation.

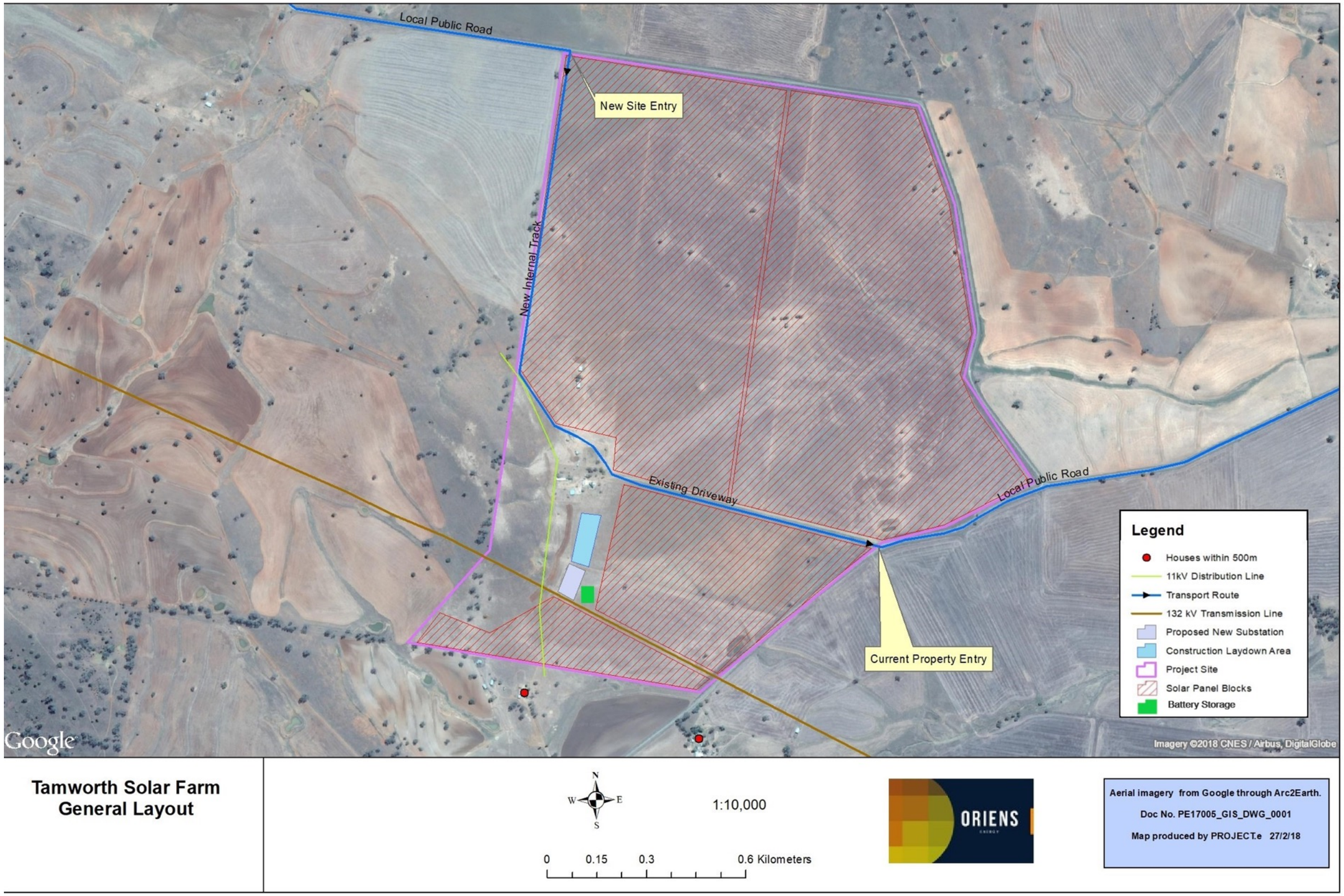
The proposed development footprint, including the construction laydown area and substation, would cover approximately 80% of the property area. A hilly outcrop in the southwestern corner of the property would remain under existing land use (ie intermittent grazing).

An existing extra-high voltage (132kV) transmission power line under easement crosses over the southwestern corner of the property. An existing high voltage (11kV) distribution power line under easement crosses the property, entering on the western boundary and exiting on the southern boundary. See Figure 3: Draft site layout.




- **Figure 1: Regional Context**


- **Figure 2: Proposed transport route**




- **Figure 3: Draft site layout**

## 3.3 Site Locality

The local topography is generally flat or slightly undulating, with a low rocky outcrop in the south-western corner of the property. This slightly elevated area will not be used for the development.

Figure 4 shows the outlook to the east-northeast from near the foot of the elevated area, just to the west of the homestead and sheds. The existing driveway is visible at the far right of the photo, and the view looks over the construction laydown area in the foreground (where existing outbuildings and yards will be removed). The mid ground darker green area is currently growing cowpeas. This area comprises the bottom third of the northwestern solar panel block.

**Figure 4: Outlook to east-northeast overlooking site**

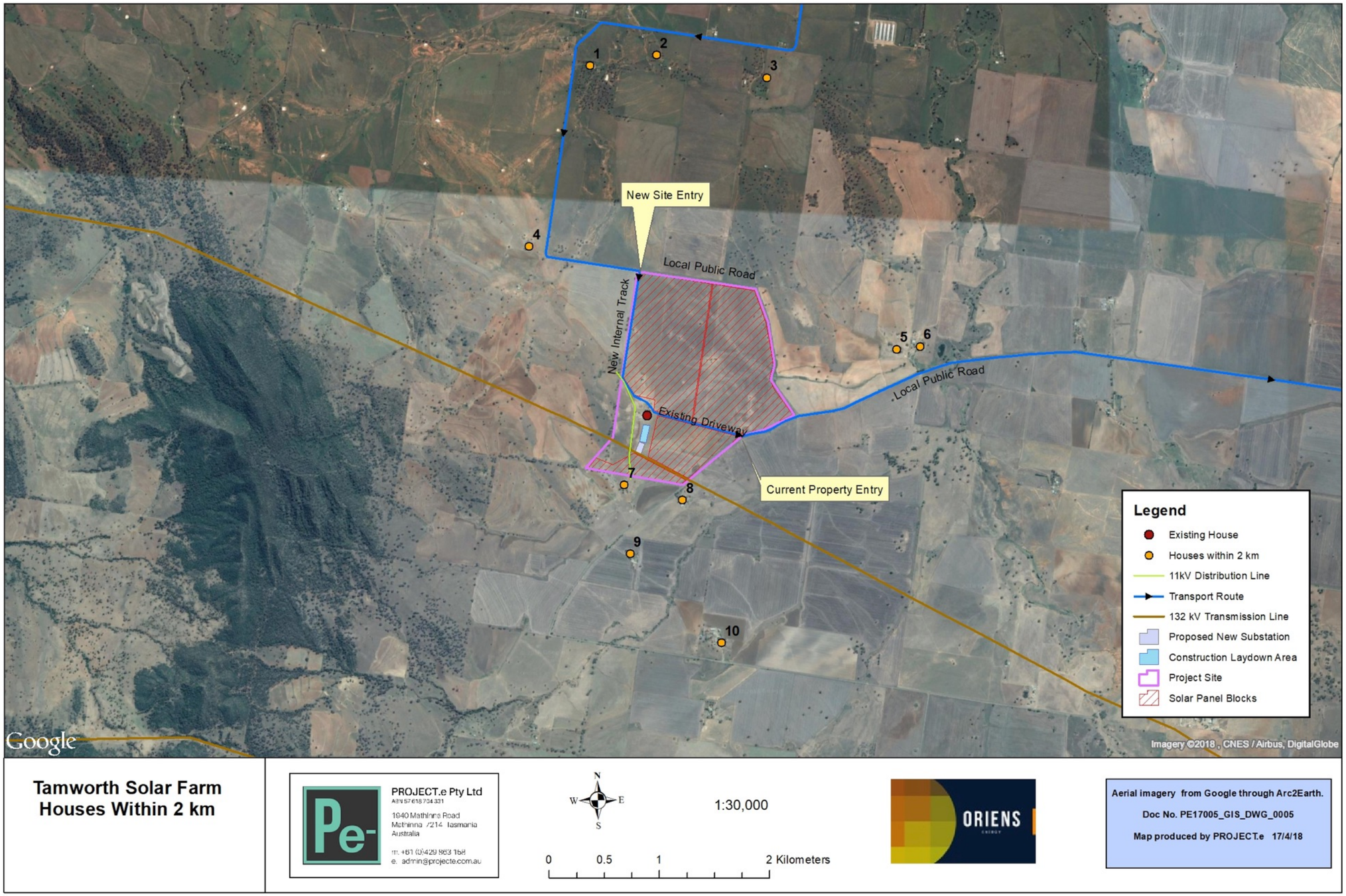
The site is bounded on three sides by local roads, which service the farms in the immediate locality.

There are two rural residences on neighbouring properties within 500m of the southern boundary of the project site. There are approximately 10 rural residences within a 2km radius of the project site. These are shown on Figure 5: Houses within 2 km.

Note that should the project proceed, Oriens Energy will purchase the property on which the project sits. The existing residence on the property will not be used for residential purposes.

Somerton, approximately 7km to the north on the Oxley Highway, is a village between the regional cities of Tamworth and Gunnedah with a population of approximately 573 (2011 census). Somerton Village adjoins the Peel River, and lucerne is grown along the fertile Peel River flats. Services available in Somerton include a primary school, roadhouse, hotel and memorial hall.

Approximately 25km to the east is Tamworth, population approx. 63,000 (2016 census), the main city of the region with an airport and all services. Approximately 60km to the west is Gunnedah, population approx. 9,700 (2016 census), which is in the adjoining local government region.




- **Figure 5: Houses within 2 km**

## 3.4 Proposal components

The proposal consists of the following elements:

### Photovoltaic modules and mounting

Photovoltaic modules for the project will be on an approximately 170 ha footprint, in four main blocks. The layout of the solar panels has been designed to accommodate the existing infrastructure, internal access tracks and drainage lines. See Figure 3: Draft site layout.

It is expected that approximately 250,000 panels will be installed, depending on the type of technology used for the panels.

The panels will be attached to mounting racks and connected through electrical panel wiring to connect with the inverter stations.

The panel wiring will either be installed underground in shallow insulated trenches or above ground at a height equal to or below the panels. Where excavation is below ground, excavation is not expected to be below 1m in depth. The excavation will comply with the Soil Erosion and Sediment Control – Engineering Guidelines.

The mounting racks will either be fixed tilt (modules are fixed at a particular angle) or single axis tracking, where the modules rotate to track the sun. These mounting racks (including the panels) will not exceed 6m in height.

### Power conversion units

The solar farm will include approximately thirty (30) Power Conversion Units (PCU) dispersed throughout the PV panel areas. The panels will connect via DC panel wiring to the PCUs. The stations will include switching, protection, DC to AC conversion equipment (inverter and electrical transformers).

### Internal electricity network

A 33kV internal electricity network will be used to collect the power from the inverter stations to the site's substations. The internal network will consist of underground cabling in compliance with all relevant codes and standards.

### Substation and control room

One (1) substation will be provided for the development. The substation will be connected to the Transgrid overhead line Network at 132kV.

The substation will provide switching and protection for the feeders of the 33kV solar plant electrical network. It will also provide electrical voltage transformation to the connection voltage.

Connection Works activities will be required in conjunction with Transgrid and AEMO.

A control room will be established within the 33kV Switching Building.

### Battery Energy Storage System

A battery energy storage system (BESS) is proposed for the project. The specific technology, MW rated capacity and MWh of storage will be determined during the detailed design phase of the project. At this time it is envisaged that the system will be Lithium -Iron, with approximately 19MW rating. The BESS will be housed in a secure compound adjacent to the substation (See Figure 3).

### Construction and operations ancillary infrastructure

A construction laydown area will be delineated as shown in Figure 3: Draft site layout.

The existing residential dwelling will be refurbished to serve as the Operations and Maintenance office. Temporary demountable buildings will be established in the immediate surrounding area to be used as construction offices. Several mess / crib rooms will be scattered throughout the site during construction.

Parking will be provided at the front of the office complex with demarcated overflow facility at the lower level hardstanding area. A pedestrian vehicle segregation plan will be developed and signed on the site. This will also be communicated through inductions. This plan will be systematically reviewed and remain live through the construction period.

For safety reasons, the substation will be fenced separately to the rest of the plant to restrict access to the high voltage areas. Fencing will consist of chain link and barbed wire strand.

## 3.5 Access

The main access road is via Bective-Settlement Road, with access to the Oxley Highway via both Somerton-Bective Rd as well as Bective-Thibauits Rd.

To alleviate congestion and minimise risks, a one-way route is proposed in which trucks delivering components would leave the Oxley highway at the western side of the transport loop, enter the site at a new entrance point on the northern boundary, and continue through the site along the existing driveway and out at the eastern boundary. Then trucks could return to the highway via local roads to the east of the site. See Figure 2: Proposed transport route for further detail.

Internal access for maintenance will be on a combination of tracks formed for construction delivery and installation purposes, and undisturbed ground between PV module arrays.

Site security will be managed 24 hours by an onsite guard through the entire construction period. The works area will be fenced. Animals will be prevented from straying onto the site.

A controlled signing in and induction procedure will be maintained for all staff and visitors throughout the construction and operation phases.

## 3.6 Construction activities

Construction activities are expected to take approximately 10 months, and employ up to 200 people over this time.

### Site preparation

The site is predominantly cleared of woody vegetation and fairly flat, so minimal site preparation will be required. Outbuildings and yard fences that are not required will be removed, as will any trees in the solar PV block footprint where clearing has been approved. Site entrances will be established and gates and fences installed or upgraded around the perimeter.

The construction office will be established, as will the construction laydown area. Internal tracks will be established where needed through grading and compacting if required – in particular the new delivery access track from the northern boundary.

This phase of construction will use standard earthmoving equipment such as bulldozers, graders, flatbed trucks, skidders, front end loaders, roller compactors, trenchers, backhoes, gravel trucks, cranes and aerial lifts. A water truck will be used as needed to manage dust and maintain air quality.

### Installation

Following site preparation, installation will commence.

For the PV modules, this will involve pile-driving posts into the ground to support the mounting system; attaching the mounting system, attaching panels to the mounting system; installing wiring. Minimal disturbance to topsoil is necessary in this phase.

For the PCUs (inverters and transformers), electrical cables connecting to the PV modules will be installed, either in shallow trenches or connected to the mounting system. Footings will be constructed as concrete slabs, and The PCUs will be placed on the footings. Cabling will then be terminated to them.

The internal electricity network will be installed through trenching, cable laying and backfilling in compliance with all relevant codes and standards.

The installation phase will utilize equipment such as pile drivers, augers, forklifts, welders, oxy acetylene, trench diggers, excavators, tilt tray trucks, water trucks, flatbed trucks and cranes.

The 33/132kV Substation works will progress in parallel with the construction of the main PV plant to ensure the substation is ready to receive power when the new PV plant is completed.

On site the foundations for the new 70 MVA 33/132kV transformer will be completed prior to the transformer delivery to site so that the transformer can be landed into its final position on delivery. All other civil works associated with

the substation work package will also be completed prior to the transformer delivery.

Traffic during construction would include construction workers and delivery vehicles. It is expected that during peak construction periods, no more than 60 vehicle movements per day would be generated. Timing of deliveries can be scheduled to avoid school bus operations in any routes that overlap the school bus route.

## 3.7 Commissioning

Following installation of the PV modules, PCUs and all electrical connections, pre-commissioning of the system can commence. This phase includes making terminations, testing, calibration and troubleshooting.

Testing and commissioning will then commence for the transformer and switchgear followed by an outage for the 132kV connection, carried out by Transgrid. Once all QA documentation is completed the Substation scope is complete.

## 3.8 Operations

The completed solar farm will operate during the daylight with 2 permanent staff on site. Monitoring systems installed at the farm will notify an off-site location of any performance issues, and operators will respond to any irregular issues.

A routine maintenance program will be established which will conduct regular maintenance activities including:

- Equipment and systems inspection and maintenance,
- Fence, internal access and site office management,
- Vegetation management for powerline safety, fuel load, weed management, and shading,
- Solar PV module washing, as needed,
- Security monitoring, and
- Communications with stakeholders as needed.

Storage of maintenance equipment and materials will be done at the converted residence / site office. Security fencing for the site, and separate security fencing for the substation, will be maintained.

There may be an opportunity to create secure access to a proposed viewing platform to be located on the rocky outcrop in the southwestern corner of the site. Static information display material can be erected here, for local visitors and service clubs to view the solar farm and learn about renewable energy. The Environmental Impact Statement (EIS) for the project will contain a full description of any proposed visitor facilities and associated infrastructure.

## 3.9 Upgrade and Decommissioning

The solar farm has an operational design life of 30 years. During this time it is possible that the PV modules and ancillary equipment may be upgraded or repowered, depending on the commercial viability at the time. Any upgrading and repowering would involve removal of existing equipment, disposing of these responsibly off site, and installing the latest technology on the existing support infrastructure. Recommissioning would then occur.

At the end of the life of the solar farm, the connection to the electricity grid would be disconnected, and the solar farm components removed. The site will be returned to agricultural use.

# 4 Proposal Justification and need

## 4.1 Strategic – need for new renewable generation

Various state-wide, national and international commitments and agreements exist to support the development of renewable energy generation projects.

At the COP21 climate talks in Paris (December 2015), the Australian Government committed to, and has since ratified, an emissions target of a 26-28% reduction by 2030 compared to 2005 levels.

One of the key initiatives to deliver on this commitment is the Commonwealth Government's Renewable Energy Target (RET). The large-scale component of the scheme encourages investment in renewable energy projects to achieve 33,000 gigawatt hours (GWh) of additional renewable energy generation by 2020.

The federal government has also recently announced its plans for a National Energy Guarantee (NEG) to deliver more affordable and reliable electricity while meeting international commitments.

The NSW Government has recently developed a draft NSW Climate Change Policy Framework in support of the COP21 commitments and to demonstrate action on climate change. This policy has a long term objective of NSW achieving net-zero emissions by 2050.

The report *Community Attitudes to Renewable Energy in NSW* (Office of Environment and Heritage, 2015), acknowledges that there is broad public support in NSW for the adoption of alternative, renewable, low emission energy generation sources.

At a regional level, there are also indications of broad support for large scale solar projects. Mr. Col Murray, Mayor of Tamworth Regional Council, in discussion with the project team in January 2018, said that the people in his municipality were "telling us they want a focus on renewable energy". There are currently no other large scale solar developments either operating or in the approval phase in this local government area (LGA), and Mr. Murray said that the local council wants to "catch up" with neighbouring and comparable LGAs.

The Tamworth Solar Farm can play a part in fulfilling the local and global need for renewable, clean, reliable energy generation.

## 4.2 Alternatives considered

### Alternative locations

Oriens Energy is a newly formed organization, however the team members are experienced solar professionals in both Australia and internationally. They understand the factors that make a good solar project.

Thus a range of potential sites were tested against a series of desktop and ground-truthed filters, resulting in the Tamworth project being front runner for their focus in NSW at this time. These factors include:

**Land and Environment**: straightforward land tenure to enable an option for purchase or lease from preferably just one landowner; minimal or no native vegetation; no major watercourses and simple local surface hydrology; flat or gently undulating topography; not high value or specialized agricultural enterprise area; excellent existing access; few immediate neighbours; supportive local council; no major flood or bushfire risk.

**Electricity Grid assessment**: ability to connect with low cost to extra-high voltage transmission line, with capacity to carry expected energy production, and no risk of competition from other projects for carrying capacity.

**Commercial**: cost of lease / purchase of land fits within business case modeling; good access to local contractors and transport routes via major arterial roads.

## 4.3 Capital value

In accordance with clause 3 of the Environmental Planning and Assessment Regulation 2000, an estimate of the Capital Investment Value, performed by a suitably qualified entity, will be provided upon submission of the corresponding development application.

# 5 Consultation

## 5.1 Community and Stakeholder Engagement Plan

Oriens Energy understands that early consultation with a wide range of stakeholders is important and valuable for the project, to identify and respond to any concerns in the early scoping stage, and to set the scene for an open, responsive and transparent process with interested stakeholders.

Preliminary engagement and consultation has commenced with a range of key stakeholders, and a Community and Stakeholder Engagement Plan has been drafted for the project. This plan identifies stakeholder groups, their likely issues and concerns, approaches to facilitating engagement, and a program of actions to commence during the preparation of the EIS.

The proposed engagement during EIS preparation, and throughout construction, aims to provide opportunities for stakeholders to become aware of the project, voice any concerns or issues they may have, and create opportunities for community members to be engaged in the project in a positive way.

## 5.2 Consultation to date

The preliminary consultation with key stakeholders to date has been with the following:

- The project site landowner, and via them to the two nearest neighbours to the project who have houses within 500m of the site;
- Tamworth Regional Council, including the Mayor, Manager of Development and Approvals, Director of Planning and Compliance;
- Local Land Services staff in regional offices of Tamworth, Gunnedah, Calala in the areas of Native Vegetation, Natural Resource Management, Soils and Biodiversity;
- Dept of Planning at DPE offices in Sydney for a pre-submission briefing;
- Some local businesses, including the local Real Estate businesses.

## 5.3 Key stakeholder groups

Communication channels and engagement techniques will vary across stakeholder groups and throughout the various project phases. The key stakeholder groups, and proposed communication approaches, are outlined below.

### 5.3.1 Geographical neighbours

This group includes property owners and residents adjacent to the project site itself, those within 2 km of the project site, and all property owners and residents that are adjacent to access routes between the Oxley Highway and the project site.

Their key concerns and values are likely to be a desire to be informed about project activities and characteristics, and a desire for opportunities to provide feedback to the project developer about matters of interest to them.

For this group of stakeholders, personal relationships will be developed with the project team, and direct communication channels will be established and maintained. Initial contact will be made by phone call and/or letter drop in the coming month, to introduce the project, the proponent, and invite these stakeholders to meet the project proponents at a BBQ at the project site. This will provide an informal and direct opportunity for the residents to ask questions and express any concerns, opinions or suggestions directly to the project team.

A register of all communications with these stakeholders will be established, and any concerns or questions will be answered directly through verbal or written responses. The responses will be recorded on the communications register.

### 5.3.2 Regulatory agencies and authorities

This group of stakeholders includes the Tamworth Regional Council, state and local regulators and agencies responsible for various aspects of the project, and utilities or authorities such as Transgrid and RMS who are key players in specific aspects of the project.

Their key concerns / values are likely to include a desire to fulfill their roles, ensure the project proceeds with proper regard to the values, codes, compliance matters within their responsibility, and have a positively enhanced reputation and experience through their association with the project.

Communication channels for these stakeholders will primarily be initiated by the proponent, and include one-on-one phone calls, meetings and correspondence on matters pertinent to their interest in the project.

### 5.3.3 Businesses

This group of stakeholders includes suppliers and contractors for the project, and local businesses in the nearby towns, which may interact with the project. Their key concerns / values include the opportunity for positive business engagement and growth through association with the project.

Communication channels with these stakeholders will include initial seeking of expressions of interest through existing networks and relationships, local media notices, and word of mouth. A register of local businesses and suppliers will be established. Engagement with business stakeholders will be direct and one-on-one as appropriate to their services.

### 5.3.4 External stakeholders

The external stakeholders are a diverse group, including the general public and communities of Tamworth, Somerton and other regional towns; Aboriginal groups; schools and universities; local interest groups; renewable energy industry / advocacy groups; local, state and federal government agencies without direct regulatory roles; and media.

For these stakeholders a range of communication channels will be established. A key activity will be to provide relevant and timely information about the project and its current stages. This will be facilitated by the communications materials

and processes outlined below. Where appropriate, one-on-one communications will be made with particular stakeholder groups, and all direct communications will be recorded on the communications register.

### Display materials

Colour 2 page fact sheet supplied to local residents and businesses, tourism outlets, Tamworth Regional Council. Roll-up banners created for use in council chambers or workshop spaces when required.

### Project web page

- facts about project, FAQ list
- broad brush construction schedule
- downloadable newsletters, fact sheets
- events calendar
- "contact us" email which is monitored by Oriens Energy
- Media releases and media enquiries section
- Links to Tamworth Regional Council, EPC contractor, and others as appropriate

### Newsletters / direct mailout

Scheduled approx. bi-monthly letter dropped to geographic neighbours and outlets in the local towns (including schools, businesses). Notifications about key activities, inviting input, describing contact avenues if any concerns, complaints or bright ideas.

### Education program

To be developed in collaboration with local schools, during construction phase. Aim to provide information about project, raise awareness of solar energy and renewables in general. Potentially provide for site visits by local schools during appropriate stages of construction.

### Media pack

Containing Fact sheet, project specs, project schedule, footage / photos, contact information.

# 6 Statutory Planning Framework

The development of large scale Solar farms in NSW is subject to a range of State and Commonwealth planning policies, legislation, and local plans. This section summarises the legislative requirements and planning framework for this proposal.

## 6.1 Commonwealth legislation

### Environmental Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is administered by the Commonwealth Department of Energy and the Environment (DoEE) and provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage place defined a 'matters of national environmental significance' (MNES).

Under the EPBC Act, a referral to the Australian Government is required for proposed actions that have the potential to significantly and adversely impact on the MNES, or on Commonwealth land.

The MNES are identified in the Act as the following:

- World heritage properties;
- National heritage properties;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions; and
- Water resources.

The extent to which this legislation applies to the Proposal, and whether an EPBC referral is required, would be assessed in the flora and fauna impact assessment as part of the EIS.

### Native Title Act 1993

The Native Title Act 1993 provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that indigenous people had a system of law and ownership of their native lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises this as native title.

In relation to land where native title has not been extinguished, the Native Title Act 1993 sets out procedures which must be complied with in relation to a 'future act', being an 'act' which affects native title rights and interests.

## 6.2 NSW legislation

Permissibility and assessment pathways for solar energy development in NSW are determined by the relevant environmental planning instruments, including State Environmental Planning Policies and local environmental plans (LEPs).

### Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) sets out a planning assessment and approval pathway for different kinds of development, including SSD solar energy development. The Tamworth proposal would be assessed under Part 4 of the EP&A Act, and development consent is required from the Minister for Planning.

### State Environmental Planning Policy (State and Regional Development) 2011

The State Environmental Planning Policy (SEPP) (State and Regional Development) 2011, Clause 20 of Schedule 1, states that the following is considered state significant development:

> *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:*
>
> *(a) has a capital investment value of more than $30 million, or*
>
> *(b) has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.*

Tamworth Solar farm will have a capital investment value in excess of $30 million, therefore the proposal is classified as 'State Significant Development', or SSD, under Part 4 of the EP&A Act.

### State Environmental Planning Policy (Infrastructure) 2007

The State Environmental Planning Policy (SEPP) (Infrastructure) 2007 was developed to improve the efficiency of the existing planning system in delivering essential public infrastructure and services.

The SEPP Infrastructure outlines the planning processes for infrastructure projects under Part 4, Part 5 and exempt development. Clause 34(1) permits electricity generating works to be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The prescribed zones include RU1 Zone, and accordingly electricity generating works are permitted on the land.

### Tamworth Regional Local Environmental Plan 2010

The project site is land zoned RU1 Primary Production under the Tamworth Regional Local Environmental Plan (LEP) 2010. The project is broadly consistent with the objectives of the RU1 zone. The objectives are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.

- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To permit subdivision only where it is considered by the Council to be necessary to maintain or increase agricultural production.
- To restrict the establishment of inappropriate traffic generating uses along main road frontages.
- To ensure sound management of land which has an extractive or mining industry potential and to ensure that development does not adversely affect the extractive industry.
- To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.

Electricity generation is not explicitly prohibited in the RU1 zone. Under the SEPP (Infrastructure) 2007, the project is permitted with consent as it is an electricity generating works. The LEP explicitly acknowledges that provisions of SEPPs prevail over the provisions of LEPs.

### Biodiversity Conservation Act 2016

Biodiversity assessment will be required in accordance with the Biodiversity Conservation Act 2016, as the Tamworth Solar project has not had SEARS issued to date, nor has substantial environmental assessment occurred prior to 25 August 2017.

Due to the commencement of the Biodiversity Conservation Act 2016 (NSW) on 25 August 2017, the NSW Government and the Commonwealth Government are reviewing the Assessment Bilateral, which accredited the NSW environmental assessment process for SSD proposals that impact on certain matters of national environmental significance under the EPBC Act, thereby removing the need for separate assessment by the Commonwealth.

Since this project will assess biodiversity impacts under the new Biodiversity Conservation Act, both the NSW and Commonwealth legislation will be relevant, until a new Bilateral Agreement is in place.

### Roads Act 1993

The Roads Act 1993 addresses authorities, functions and regulation of activities relating to the use and type of roads. Consultation with the Roads and Maritime Services (RMS) and Tamworth Regional Council will be undertaken to determine access and if necessary any upgrading of access points to the proposed project.

If required, approval under section 138 of the Roads Act will be sought if there is any impact or works needed on or over a public road.

Section 89K of the EP&A Act provides that an approval under section 138 of the Roads Act cannot be refused if it is necessary for carrying out State significant development that is authorised by a development consent.

### Native Vegetation Act 2003

The main objective of the Native Vegetation Act 2003 is to promote ecologically sustainable development, prevent broad scale clearing and protect and improve native vegetation.

Under section 89J of the EP&A Act, an authorisation referred to in section 12 of the Native Vegetation Act 2003 to clear native vegetation would not be required for a State Significant Development.

### Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act 1997 (POEO Act) is the key piece of legislation for environmental protection in NSW. The POEO Act creates pollution offences relating to land, water, air and noise pollution and imposes a duty on polluters and occupiers to report pollution incidents to the EPA and other government agencies. An environment protection licence (EPL) under the Protection of the Environment Operations Act 1997 (POEO Act) is not typically required for electricity generation by solar power.

The Tamworth project will not require and EPL since it is not a hybrid system or combined energy generating system.

### Other NSW legislation

Other NSW legislation which may be relevant to the project is listed below. The extent to which any of this legislation applies to the proposal will be documented in the EIS.

- National Parks and Wildlife Act 1974
- Heritage Act 1977
- Crown Lands Act 1989
- Contaminated Land Management Act 1997
- Water Management Act 2000
- Waste Avoidance and Resource Recovery Act 2001
- Native Title (New South Wales) Act 1994
- Noxious Weeds Act 1993
- Rural Fires Act 1997

# 7 Preliminary Impact Assessment

## 7.1 Methodology

This preliminary impact assessment has been conducted using information gained from several sources, including:

- online searches of existing databases,
- direct communication (face to face, phone, email) with landowners, Local Land Service staff in the region, local council staff and elected members,
- site visits to the project area, and
- legal due diligence performed for the process of securing a purchase option on the land.

The information obtained from these sources was used to conduct a preliminary risk assessment, and key issues identified for further information gathering during the EIS phase.

## 7.2 Assessment of Key issues

The key environmental issues for large scale solar farms are generally well defined. The following sections outline the existing environment, potential impacts, and further assessment requirements for the key environmental issues identified in this scoping phase.

### Biodiversity

The project area has been cleared of native vegetation for over 100 years. For example, a Crown Plan from October 1918, found during the legal due diligence process, shows most of the title is cleared at that time, other than a few scattered trees. See Figure 6: Crown Plan 1918.

*Note full Plan is included as pdf file in Attachment 1.*


Figure 6: Crown Plan 1918

A Property Vegetation Plan (PVP) for the site, approved by North West Local Land Services in 2014, verifies the vegetation over almost all of the property (excepting the rocky outcrop in the southwest corner) as 'Non protected regrowth' where clearing and agricultural activities are allowed. The PVP is included as Attachment 2.

A search using the Commonwealth Protected Matters Search Tool (PMST) with a 1km buffer around the site, yielded the results shown in Table 1 below:

| PMST result | Potential for impacts from project |
|---|---|
| 3 Wetlands of International Importance | All are > 1000km upstream of site; no further assessment required |

| | |
|---|---|
| 4 Listed Threatened Ecological Communities | All these communities are natural grasslands or grassy woodlands. Unlikely to be intact on the project site following recent grazing, cropping and pasture improvement activities. |
| 21 Listed Threatened Species<br>7 bird species<br>1 fish species<br>1 frog species<br>6 mammal species<br>1 reptile species<br>5 plant species | During the EIS phase, a detailed ecological assessment by a qualified ecologist, including site visits where necessary, will be undertaken to determine likelihood of presence of these species, or potential habitat.<br>Potential impacts will be assessed, and avoidance or mitigation measures will be outlined in the EIS. |
| 11 Listed Migratory Species | |
| 17 Listed Marine Species | Unlikely to occur in the project area. Ecological assessment during EIS phase will confirm. |
| 25 Invasive Species | Unlikely to have important implications from the project. Ecological assessment during EIS phase will confirm. |

**Table 1: PMST results and comments**

During site visits to the project area, it was noted that some tree planting has occurred on the property in a corridor along the roadsides that form the northern and eastern boundary of the site. The current landowners are not familiar with when the tree planting occurred, and what species were planted. They believe the planting was carried out by previous landowners within the last 10 years.

Enquires to the vegetation and natural resource management staff at Local Land Services offices in Tamworth and Gunnedah did not yield any information regarding the plantings. They do not appear on any registers or subject to any agreements arising from Landcare funding programs.

The trees are currently generally small (<1 meter in height) with variable success in establishment. During the EIS phase a more detailed assessment of the species planted will be undertaken, and their potential for habitat value and risk of shading future infrastructure will be assessed.

An approach to retain, selectively cull, or remove the plantings will be determined, subject to the opportunity for ecological benefit, screening benefit, and risk of shading the solar PV modules.

### Land use

An examination of the data presented in the *Strategic Regional Land Use Plan for New England North West* Sept 2012 shows that the project site falls outside of the areas mapped as Strategic Agricultural Land (SAL).

The project has a design life of 30 years. After this time, and following decommissioning if that is selected as the option rather than re-powering, the land can be returned to agricultural use. Removal of structures and rehabilitation can be undertaken to restore the land capability to its pre-development use.

In the legal due diligence review conducted prior to executing an option to purchase the land, searches were conducted in September 2017, and the following were confirmed:

- no Department of Defense interests in the land,
- no ordinance contamination,
- no pipelines permits or licences,
- no gas networks,
- no mining leases.

### Visual impact

The project lies in an open agricultural area, with sparsely distributed rural residences generally some distance from the roads. The project site is typical of the landscape type found in the surrounding area, almost flat, with some gentle undulation and subtle ephemeral drainage lines.

The only elevated area overlooking the project site is on the project property itself – a rocky outcrop of low relief in the southwestern corner of the property. The outlook over the project site and surrounding landscape from this elevated position is shown in Figure 4.

There are relatively few potential receptors within the immediate project area. There are ten rural residences within 2km of the project. Many of these have existing established trees around the homesteads which will provide a degree of visual screening. The closest home to the project site is positioned such that new screening plantings may be possible and effective along the southern boundary of the project site, without risk of shading of PV modules.

A visual and landscape character impact assessment will be prepared as part of the EIS to investigate potential visual impacts of the proposal and mitigation options. Consultation with potentially affected residents, including regular local road users, will provide input into any proposed mitigation measures such as perimeter planting or residential screening.

### Noise

The project is set in an agricultural area, with background noise levels expected to be generally low. Background noise will be associated with agricultural activities such as machinery operation for crop preparation, cultivation and harvest, and local traffic.

During construction, noise sources will be project traffic including delivery vehicles, pile driving of posts, and machinery operation such as trenching equipment and earthmoving equipment.

A noise impact assessment will be conducted during the EIS phase to determine any potential noise impacts, particularly to the three residences within 1km of the site, and determine any proposed mitigation measures.

The assessment will be undertaken in accordance with the Department of Environment, Climate Change NSW (DECC) Interim Construction Noise Guidelines (ICNG), July 2009, and operational noise impacts in accordance with the NSW Noise Policy for Industry.

#### Transport

The major arterial access road to the highway is the Oxley Highway, which runs between Tamworth and Gunnedah, and is approximately 3km north of the project site as the crow flies.

Access from the Oxley Highway is on Council maintained roads, with a one way loop proposed to minimise vehicle congestion. The proposed route, to be refined and confirmed during the EIS preparation, is as follows:

- From Oxley Highway to site (inbound): via Babbinboon Road, Warminster Road. This route has approximately 9 residences having driveways that intersect with the proposed transport route.

- From site to Oxley Highway (outbound): via Prices road, Soldier Settlement Road, and (Optional) Bective Lane. This route has between 10 and 20 residences with driveways that intersect the proposed transport route, depending on exact route selected.

Any required intersection and/or road upgrades will be discussed with RMS and the Tamworth Regional Council during the EIS phase. Transport types and volumes will be defined in the EIS.

During the peak construction period, it is expected that no more than 60 vehicle movements (including heavy and light vehicles) per day will be required. During operations the traffic generated by the project would consist of occasional truck delivering maintenance materials and equipment, and light vehicles for maintenance workers.

### 7.3 Other environmental issues

#### Aboriginal Cultural heritage

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) in September 2017 has shown that:

0 Aboriginal sites are recorded in or near the location, and
0 Aboriginal places have been declared in or near the location.

The desktop analysis, including consideration of the landform and current and historical land use, indicates that there is a low likelihood of impact to cultural heritage items. During the EIS preparation, consultation will be undertaken with local Aboriginal groups, and field surveys undertaken if required.

The construction Environmental Management Plan for the project will include protocols for response to any unexpected finds of cultural material.

### Historic Cultural Heritage

A search of the NSW State Heritage Register did not reveal any registered sites within 25km of the project site. Further investigation will be undertaken during the EIS preparation.

The construction Environmental Management Plan for the project will include protocols for response to any unexpected finds of historic heritage material.

### Soils and geology / land capability

Soils will be disturbed to a degree during construction through creation of internal tracks, trenching, establishment of foundations for the mounting systems etc. All earthworks will be done in accordance with Guidelines for Erosion and Sediment Control.

As discussed in previous sections of this report, the land falls outside the areas mapped as Significant Agricultural Land (SAL), and can be returned to its pre-development capability following decommissioning and rehabilitation.

The construction Environmental Management Plan for the project will include procedures for managing earth disturbing activities to minimise erosion and control sedimentation.

### Surface water and hydrology

There are no natural permanent waterways on the property. A small existing dam near the homestead will be maintained to provide water for dust suppression during construction, and potentially water for cleaning if required during operations.

The EIS will quantify water demand for the project and discuss potential sources if on-site water supply is insufficient.

Flood risk is not expected to be affected by the project, and in the EIS a flood assessment will be undertaken.

The construction Environmental Management Plan for the project will include procedures for the prevention, response and management of any hydrocarbon or other material spills to surface or groundwater.

### Contamination

A search of the NSW EPA Contaminated Land Register for the Tamworth Regional Council area yielded five notices, all of which are close to the centre of Tamworth and more than 20 km from the project site.

It is expected that the risk of unexpected discovery of contaminated land during construction is low.

There is expected to be minimal storage of chemicals or other materials on site, and the risk of contamination due to a spill is expected to be low.

The construction Environmental Management Plan for the project will include procedures for storage, management, spill response for any chemicals and/or hazardous materials used on site.

### Air quality

The ambient air quality at the project site is expected to be typical of rural NSW areas, with agricultural activities such as cropping and stock management.

During construction, some dust may be generated through earthworks and vehicle movements, and project traffic may result in minor increase in emissions.

No air quality impacts are expected during operation.

The EIS will document an assessment of potential air quality impacts, and mitigation measures to be included in construction management protocols.

### Waste

During construction some waste streams will be generated, including excavated material, packaging, domestic waste, and sewerage. The EIS will consider waste management further, and waste management procedures will be incorporated into the project construction Environmental Management Plan.

### Hazards and risks

Due to its location in a predominantly cleared landscape, the project is unlikely to be affected by bushfire, or pose an increased bushfire threat.

The EIS will include a preliminary risk screening in accordance with *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33* (DoP, 2011), and if the preliminary risk screening indicates the development is "potentially hazardous", a Preliminary Hazard Analysis (PHA) will be prepared in accordance with *Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis* (DoP, 2011) and *Multi-Level Risk Assessment* (DoP, 2011).

The EIS will further consider an assessment of all potential hazards and risks including but not limited to bushfires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure. Any mitigation or response procedures will be incorporated into procedures for construction and/or operation.

## 7.4 Cumulative impacts

At the time of preparation of this scoping report, there are no other large scale solar proposals within the Tamworth Regional Council area. This follows a

review of the Department of Planning and Environment Major Projects Register, and information from the Director of Planning and Compliance at the Tamworth Regional Council.

A 155MW solar farm is currently proposed by Photon Energy near Gunnedah, in the neighbouring local government area to the west, some 60km from the Tamworth solar project site. SEARs were issued for the Gunnedah project in August 2017.

Discussions with Transgrid to date have indicated that the 132kV high voltage transmission line has ample capacity to accommodate the Tamworth Solar proposal as well as the Gunnedah project.

During EIS preparation, an updated review of relevant sources will be undertaken, and an assessment of any cumulative impacts and interactions with other projects in the local area. The EIS will include documentation of mitigation measures to mitigate any potential cumulative impacts.

# 8 Proposed scope of EIS

The EIS will incorporate all requirements of the SEARs issued for the project. In general, and following the *Draft Large Scale Solar Energy Guidelines*, the EIS would contain:

- A full description of the project, including details of construction, operation and decommissioning, timing of key phases, justification for preferred layout;
- A response to mattes such as landscape values and other environmental considerations identified during scoping and EIS preparation;
- A description of how site constraints are addressed
- Technical studies, eg biodiversity assessment, visual assessment, traffic assessment;
- An analysis of potential impacts at each stage of development;
- A description of measures to avoid, minimise, mitigate, offset or otherwise manage and impacts associated with the project;
- A description of any residual impacts along with an analysis of acceptability; and
- Details of community consultation undertaken and community engagement activities planned during construction and operation.

# Attachments

- **Attachment 1: Crown Plan 1918**

- **Attachment 2: Property Vegetation Plan**