Preliminary Environmental Assessment

ILLABO SOLAR FARM

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ACRONYMS AND ABBREVIATIONS

AHIMS	Aboriginal heritage information management system
Cwth	Commonwealth
DECCW	Refer to OEH
DoEE	Department of Environment and Energy (Cwth)
DP&E	Department of Planning and Environment (NSW)
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EIS	Environmental Impact Statement
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cwth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
Ha	Hectares
Heritage Act	*Heritage Act 1977* (NSW)
IPCN	Independent Planning Commission of NSW
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007* (NSW)
KFH	Key Fish Habitat
km	Kilometres
LALC	Local Aboriginal Land Council
LEP	Local Environment Plan
LGA	Local Government Area
MW	Mega Watts
MNES	Matters of National Environmental Significance under the EPBC Act (*c.f.*)
NPW Act	*National Parks And Wildlife Act 1974* (NSW)
NSW	New South Wales
OEH	Office of Environment and Heritage (NSW)
PEA	Preliminary Environmental Assessment
SEAR's	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy (NSW)
TEC	Threatened Ecological Community
sp/spp	Species/multiple species
SSD	State Significant Development

1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

This Preliminary Environmental Assessment (PEA) provides a description of the Illabo Solar Farm proposal, including the proposal site, transmission corridor and its surroundings. It provides the statutory framework for approval and identifies key potential environmental issues that may be associated with the solar farm proposal.

The report has been prepared to support a request to the Department of Planning and Environment (DP&E) for the Secretary's Environmental Assessment Requirements (SEARs). The SEARs would guide the preparation of an Environmental Impact Statement (EIS) for the proposal, under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 THE PROPONENT

Tilt Renewables is a dual New Zealand and Australian listed owner, operator and developer of established wind farms. Tilt Renewables has an extensive wind and solar development pipeline.

Tilt Renewables originally formed part of the New Zealand based Trustpower Ltd; founded in 1924 as a local power authority, which has been active in Australia since 2001. In October 2016, Tilt Renewables (hereafter 'the proponent') was established as the result of the demerger from Trustpower Limited.

The proponent has had a strong track record of developing wind assets in both Australia and New Zealand. In Australia, the proponent has development and operating projects across Queensland, New South Wales, Victoria, South Australia and Western Australia.

The proponent has an existing asset base of 322 operating wind turbines across eight wind farms, with a total installed capacity of 582MW. This includes Snowtown Wind Farm, South Australia's largest and Australia's second largest wind farm, Salt Creek Wind Farm which began operation in 2018, and Tararua Wind Farm, New Zealand's largest wind farm.

The proponent's pipeline of development projects has the potential to produce more than 2000MW of additional renewable generation capacity.

2 PROPOSAL SITE DESCRIPTION

2.1 PROPOSAL SITE CONTEXT

The proposed Illabo Solar Farm is located south of Allawah Road, about 6 km south east of Illabo, New South Wales (Figure 2-1). The proposal site is located within the Junee Local Government Area (LGA) in the Riverina region. The 132kv Murrumburrah – Wagga North transmission line would be used to connect the proposed solar farm to the national grid via a new 132 kV substation, proposed as part of this project.

The land surrounding the proposal site includes cultivated agricultural land, grazed land and Crown Land. The closest national park is the Ulandra National Park approximately 10km from the proposal site; as the national park is not in close proximity to the site, it is not considered further in this assessment. The

primary industry for employment in the Junee LGA is meat processing, followed by correctional and detention services and then grain-sheep or grain-beef farming (ABS 2016).

The closest town to the proposal site is Illabo, which had a population of 144 people in 2016 making up 2.2% of the Junee LGA. Illabo provides services and facilities to the local area including a Public School, hotel accommodation, post office, Rural Fire Service, churches, and recreational area.

The town of Junee is approximately 18km west of the proposal site and is the closest regional centre for the residents of Illabo and surrounding areas. With a population 4,922 in 2016, Junee makes up 78% of the Junee LGA population (ABS, 2016). Junee provides services and facilities including a hospital and medical centres, shopping facilities, post office, library, accommodation, banks and an historic museum.

Wagga Wagga is approximately 50km south-west of the proposal site within the Wagga Wagga LGA and services residents of Illabo and Junee. The population in 2016 was 54,411 making up 87% of the Wagga Wagga LGA population (ABS, 2016).

Renewable energy projects are proposed in the region and include:

- Junee Solar Farm, proposed by Terrain Solar. Construction is anticipated to commence in 2018. It is located about 20km west of the proposal site.
- Sebastopol Solar Farm, proposed by ib vogt, would be located about 50km north-west of the proposal site. The EIS and DA are currently being prepared.
- Gregadoo Solar Farm, proposed by Green Switch Australia, would be located about 55km south-west of the proposal site. The EIS and DA are currently being prepared.
- Bomen Solar Farm, proposed by Renew Estate, would be located about 43km south-west of the proposal site. The project is currently being determined by DP&E.

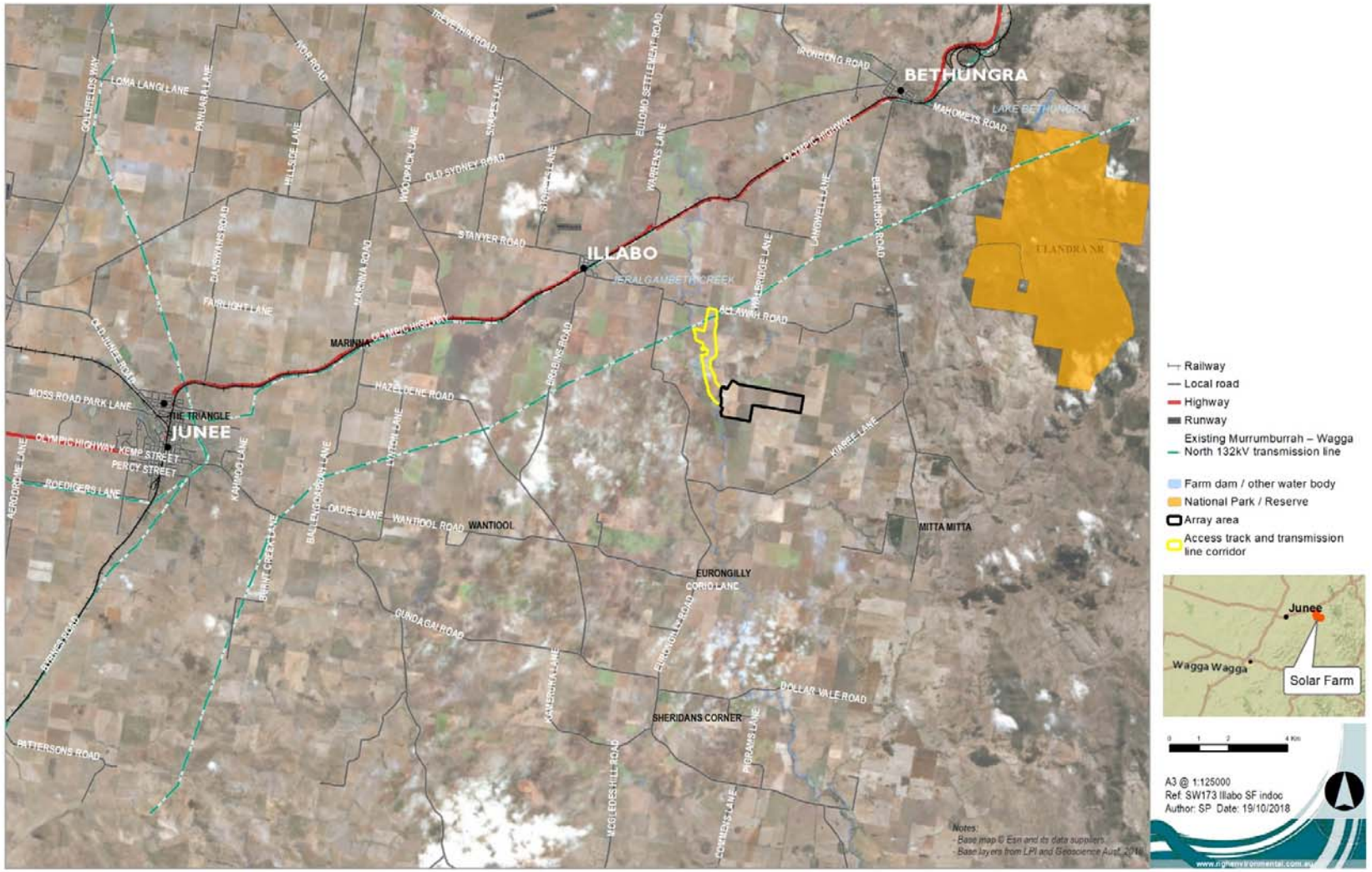

Figure 2-1 Proposal site location

2.2 THE PROPOSAL SITE

The Illabo Solar Farm proposal would be located on a dryland mixed farming property of approximately 1040 ha. The development would occupy about 25% of the farm incorporating the following lots:

- Lot 1 DP1095089
- Lot 33 DP 751418
- Lot 1 DP501135
- Lot 2 DP501135
- Lot 2 DP829944
- Lot 37 DP751418
- Lot 1 DP627535

The proposal site would consist of a separate transmission line and array site; both on land zoned RU1 Primary Production. As the nature and magnitude of environmental impacts would differ with respect to the transmission line and array site, these will be discussed as separate entities throughout this PEA.

2.2.1 Transmission corridor

The transmission line itself would occupy a very small area within the proposed investigation corridor which is approximately 123ha incorporating Lot 1 DP1095089, Lot 33 DP 751418, Lot 1 DP501135, Lot 2 DP501135, Lot 2 DP829944 (Figure 2-1). The transmission line, primary access and substation would be constructed within the transmission corridor.

2.2.2 Array area

The array area would occupy about 222ha incorporating Lot 2 DP501135, Lot 2 DP829944, Lot 37 DP751418, Lot 1 DP627535 (Figure 2-1). The solar panel array and ancillary infrastructure would be constructed within the array area.

2.3 CURRENT LAND USE

The area including and surrounding the proposal site has been utilised for broad-scale agriculture including the production of crops and livestock grazing for many decades. It is relatively flat with minimal native vegetation remnants.

The land surrounding the proposal site is currently utilised as a dryland mixed farming operation, producing merino wool, prime lambs, beef cattle, oilseed and cereal crops (canola, wheat, oats and barley). This mix of enterprises is typical in the locality. All paddocks are either grazed or cropped on an annual basis and are fully utilised for agricultural production. About 90% of the property is arable, with the remaining 10% comprised of non-arable hill and creek areas, or land dedicated for tree planting and natural regeneration. This land has been used for cropping and grazing for many decades.

The array area comprises about one quarter of the total farm area and is rotated on a cropping and pasture basis, as required to support the enterprises detailed above. When in a pasture rotation, the paddocks have been utilised for the grazing of livestock. When in a cropping rotation, the paddocks are utilised for grain or oilseed production with the potential for livestock grazing dependent on crop variety. Although state-wide land and soil mapping indicates the land has a high to very high capability, climatic conditions,

such as frost have historically had a severe negative impact on the success of crop production in some paddocks, with unreliable rainfall also a factor in some seasons.

The land outside of the proposal site would continue to be used for agricultural purposes, and the proposal site would have adjistment potential, as a ground cover management strategy under the array and along the transmission corridor.

3 THE PROPOSAL

3.1 PROPOSAL DESCRIPTION

The development would be established on about one quarter of the total area of the farm, incorporating generally flat cleared farming land approximately 2.2km south of the existing Murrumburrah – Wagga North 132kV transmission line:

- The transmission corridor would incorporate a dedicated transmission line up to 132kV to connect to the national grid, a substation and access track.
- The array area would incorporate solar panel arrays and associated ancillary infrastructure.

The proposed solar farm would generate up to 80 MW of solar energy via up to 290,000 solar photovoltaic (PV) panels. These panels would contain a series of interconnected cells that convert sunlight directly into electricity in the form of direct current (DC). This electricity would be converted to alternating current (AC) via solar inverters and step-up transformers and would have the potential to be stored in on-site battery storage facility.

The groups of solar panels would be connected to each inverter by underground and overhead cabling and the inverters linked together to collect the total energy being produced. Step-up transformers would be housed within the inverter containers. Underground lines would be placed from each inverter station to the substation where the voltage would be increased via one or more transformers using an on-site substation (transformer station). The energy generated would be injected into the national electricity grid via the on-site substation, which would connect to the solar farm via a dedicated transmission line of up to 132kV.

Access to the solar farm will be provided by a dedicated access track which will follow a similar route to the dedicated powerline. The track is likely to run south from Allawah Road, through the transmission corridor to the array area.

An operations and maintenance facility will also be established, together with a hardstand and laydown area within the array area, with a small car parking area and this will provide for battery storage, if considered viable.

The following infrastructure is anticipated to be required for the proposed solar farm:

- Fixed or single axis tracking solar panels
- Inverter stations
- Underground cabling to connect inverter stations to substation
- Internal access tracks
- Overhead transmission line of up to 132kV to connect to the grid
- 132 kV Substation

- Security and fencing
- Operations and maintenance facility
    - Control room and site office with amenities
    - Maintenance, spare parts and storage building
    - Car parking
- Laydown/compound area
- Future battery storage area
- Ancillary infrastructure
    - Stormwater
    - Water
    - Onsite sewerage
- Intersection treatment, upgrades and construction of access track off Allawah Road.

It is anticipated that the transmission corridor impact area would be significantly reduced, in comparison to the corridor shown, upon determining the precise access track and transmission line easement locations.

4 PROPOSAL NEED AND ALTERNATIVES

4.1 PROPOSAL NEED

The renewable energy sector in Australia contributes 14.3% of the country's overall electricity; more than 50 large scale renewable energy projects are currently under way or being developed creating up to 5,500 jobs and more than $9.3 billion of investment (CEC, 2018). Large scale solar farm projects such as the proposed Illabo Solar Farm have the potential to benefit average household electricity bills substantially and reduce power disruptions providing alternative generation sources for the energy sector.

The Illabo Solar Farm proposal would provide the following benefits, specific to Australia's commitments:

- Reduction in greenhouse gas emissions required to meet our international climate commitments;
- Assisting the transition towards cleaner electricity generation;
- Direct contribution to help in meeting the Renewable Energy Target (RET).

At a State level, the Illabo Solar Farm proposal is consistent with current goals and targets for renewable energy generation in NSW. These include Goal 22 of the NSW 2021: A plan to Make NSW Number One (NSW Government 2011):

> *Contribute to the national renewable energy target [i.e. 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.*

The proposal is also consistent with the three goals of the NSW Renewable Energy Action Plan (NSW Government 2013) which include to:

1. Attract renewable energy investment and projects.
2. Build community support for renewable energy.
3. Attract and grow expertise in renewable energy.

The COP21, also known as the 2015 Paris Climate Conference, achieved a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C, chiefly by reducing greenhouse gas emissions. The Illabo Solar Farm would form part of the Australian effort to help meet this target.

During construction, the Illabo Solar Farm proposal will create local employment and economic stimulus in Illabo and surrounding service towns. During construction, approximately 100 jobs will be created along with an additional one or two permanent jobs during operation. These benefits could be expected to extend to local service centres including Illabo and Wagga Wagga. These townships will provide accommodation, food, fuel and trade equipment and services. Most of these benefits would occur during the construction period. Limited but maintained economic benefits during the approximate 30 year lifetime of the project would continue to occur during monitoring and inspections, maintenance, repair and upgrade of infrastructure at the solar farm.

Generally, solar farm development enjoys community support. OEH commissioned community research regarding attitudes to renewable energy in 2014 found that 89% of people support the use of renewable energy in the form of solar farms in NSW. Furthermore, 78% of respondents supported having a solar farm within 1-2 km of where they lived. Among the reasons for this were benefits to the environment and local economy. A significant amount (83%) of respondents believed that NSW should produce more of its energy from renewables over the following 5 years (OEH, 2015).

4.2 ALTERNATIVES CONSIDERED

The proponent began reviewing areas for potential solar farm development throughout the southern Riverina in February 2017. Following some early engagement with TransGrid over the capacity in their local network, the proponent focussed their attention on a proposed site along the Murrumburrah – Wagga North 132kV transmission line corridor. Originally, the proponent engaged with a nearby landholder who was located approximately 5km south of the current Illabo Solar Farm. For a range of reasons is was agreed with that landholder the proposal for a solar farm was not viable, and the proponent reviewed alternative properties in the area.

In early 2017, options closer to Gundagai, near Nangus, were reviewed and considered, however they were excluded due to capacity in the network and proximity to the connection point.

The proponent identified a large landholding of about 1,040 ha about 5km north of the original location, which included a section of the 132kV TransGrid network traversing it. Over a period of 6 months a formal agreement was reached with the landholder to locate the proposed Illabo Solar Farm on their property.

The site was selected following extensive discussions with the host landholder based on land use, land type, as well as perceived impact on neighbouring properties, and proximity to the transmission network. The area proposed to host the solar farm is located on paddocks which are regarded as good to moderate, and in some cases of poorer quality by the landowner. It was the landowner's preference to utilise these paddocks as opposed to the good to higher quality land available now for continued farming practice by the landholder.

5 CONSULTATION

5.1 CONSULTATION PLANNING

A community consultation plan (CCP) has been developed for the Illabo Solar Farm proposal.

The aim of the plan is to:

1. Identify effective methods to inform the community about the Illabo Solar Farm
2. Facilitate engagement with the community, including allowing meaningful contributions from the community into the environmental assessment and project development.
3. Obtain social licence to operate from the local community, allowing for good long-term relationships with community stakeholders.

Effective engagement will require an understanding of community stakeholders, their concerns in relation to the proposal and investigating ways in which the proposal can address these concerns. This relies on the community understanding the project and specific issues of interest to them, in order to contribute effectively. The focus of the consultation plan will be on providing this understanding as well as avenues for engagement.

This plan has been developed to coincide with the early planning and assessment stages of the project. If the project is approved, consultation will also be required to continue into the construction and operational phases of the project. At this stage, only pre approval project stages are addressed.

The Consultation Plan is appended to this report as Appendix B.

5.2 CONSULTATION TO DATE

Consultation activities undertaken to date are documented in Table 5-1, below. Key issues raised to date are also identified. These issues, as well as those identified during ongoing consultation throughout the assessment phase, will be included in the EIS assessment and reflected in the final project description. A copy of the newsletter used during the consultation has been provided in this report as Appendix C.

Table 5-1 Consultation to date

Key Stakeholder	Consultation summary	Dates	Key issues raised
1. Involved landowner	The proposed site is located on a single landholder's property. Engagement with the host landholder commenced in early – mid 2017, and the original discussions were based around educating the landholder about the industry and the details associated with a solar project specifically. The proponent organised a site visit to an operating solar project, to help the landholder understand the impact of hosting a solar farm, which was a very successful exercise. Significant consultation occurred over a 12-month period which covered the activities during development, and the impacts on the property during construction. Site selection within the property was a major outcome of the consultation, which was mainly selected due to the quality of the paddocks, location to the transmission line, and proximity to nearby houses.	Engagement commenced in early – mid 2017 and continues on a fortnightly basis today.	Utilising less productive land on the farm to allow continued agricultural operations on the broader property. Location of the proposed solar farm away from adjacent neighbours, where possible. Access to the solar farm through the property. Ability for grazing to continue in the paddocks within the solar farm during operation. Impact on existing drainage lines.
2. Adjacent neighbours	The proponent has engaged over the phone and via face-to-face meetings with a number of landholders who surround the proposed solar farm. The proponent has contacted all neighbours who own land immediately adjacent to the proposed project, and at the time of lodging this PEA, has met with four of those landholders, and was still liaising with one remaining landholder on the opportunity meet in person. The proponent presented maps and a newsletter relating to the project and introduced the concept of the proposal and welcomed feedback from the surrounding residents. The proponent stressed that at this point in the project consultation is a very	Phone and face-to-face engagement commenced in July 2018, and continues.	The majority of the landholders did not raise any issues with the proposal. There was resounding support for a solar project in the area. Matters which were raised by the surrounding landholders were: Will the Allawah Road be improved, at least the bridge crossing the creek (which runs along the western boundary of the proposed project)? Is there any fire danger? Is the substation screened? One landholder raised concerns about living next to a solar farm, because the landholder felt the land was suitable for agriculture, and not solar

	important tool as responding to feedback from the community can be more easily considered for the project. Consultation will continue with both face-to-face, email and phone contact throughout the life of the development, which was stressed during the meetings undertaken to date.		farms. They also felt a solar farm was not aesthetically pleasing and felt from their paddocks they will see the project. The proponent will continue to engage with this landholder actively to ensure they are informed and have an opportunity to provide feedback on the proposal. All feedback will be considered and implemented where possible.
3. Large local employers	One of the neighbouring landholders owns a civil earthworks business, who were very interested in understanding more about the industry and the proposed solar farm. The proponent informed the landholder of the details, and also about other local projects in southern NSW which would be of interest to the civil business given the non-imminent nature of the Illabo Solar Farm.	August 2018	No issues were raised, but the opportunity to work was questioned.
4. Junee Shire Council	In mid-2018 the proponent reached out to the local Council, the Junee Shire Council. A meeting was setup with the head of Planning and two Planning and Stakeholder officers at the Council offices in Junee. A newsletter relating to the project was presented, and a conversation in relation to the project to date and the industry throughout the southern Riverina occurred. The Council were very interested and generally supportive of the opportunity a solar project would have in the local Shire. Discussion occurred regarding interest from other projects in the Junee Shire, of which the Council were only aware of one other solar project. Council informed the proponent they have experience with the approval process at a nearby solar farm.	Initiated in May 2018 and is ongoing.	Visual screening was a more prominent issue than they had anticipated at another project. More plans and maps for the project are better. Council also provided some details relating to local community groups who may have an interest in the project.

	Council invited the proponent to come back and present to the Councillors regarding the project, which the proponent intends to do once the PEA is lodged and consolation with the project neighbours had occurred.		
5. Department of Planning and Environment	In early 2018 the proponent informed DPE of an early stage solar project under development by the proponent, near Wagga Wagga/Illabo NSW. Following further engagement with the community and preparation of the PEA, the proponent organised and met with DPE in August 2018 to brief the Department on the Illabo Solar Farm. The proponent also requested any feedback in relation to the PEA process which would be beneficial for the finalisation of this document.	Early and mid-2018, and ongoing.	Questions were raised in relation to the location of an agricultural air strip next door to the proposed solar farm. Questions were raised regarding the progress made with the network service provider. Questions were raised regarding the progress with consultation to date. These matters are now addressed in this PEA.
6. TransGrid	TransGrid were engaged very early in the piece to assist the proponent with the site selection process. TransGrid were helpful with the discussion that followed which included the approximate capacity and activity in relation to the local network. Formally the proponent has lodged two Connection Enquiries with TransGrid, including one for 100MW and a revised enquiry for 80MW.	Engagement commenced in early 2017, and continues today.	Interest from other developers in the local network. Advanced status of some of those projects.

6 PLANNING CONTEXT

6.1 KEY NSW LEGISLATIVE INSTRUMENTS

6.1.1 Environmental Planning and Assessment Act 1979

Development in NSW is subject to the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and its associated regulations. Environmental planning instruments prepared pursuant to the Act set the framework for approvals under the Act.

The Illabo Solar Farm proposal would be assessed under Part 4 of the EP&A Act.

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

Clause 20 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* states that the following is considered a 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.'*

The Illabo Solar Farm proposal would have a capital investment cost estimate of more than $30 million. Therefore, the proposal is classified as "State Significant Development" (SSD) under Part 4 of the EP&A Act.

An EIS is required to be prepared for SSD, in accordance with the requirements of the Secretary's Environmental Assessment Requirements (SEARs). In determining the SEARs, the Secretary must consult with relevant public authorities.

SSDs require approval from the NSW Minister for Planning and Environment. While the Minister for Planning and Environment is the consent authority for SSD, the Minister may delegate the consent authority function to the Planning Assessment Commission (PAC), the Secretary or to any other public authority.

6.1.3 State Environmental Planning Policy (Infrastructure) 2007

Clause 34(7) of *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) provides that development for the purpose of a solar energy system may be carried out by any person with consent on any land (except land in a prescribed residential zone). A solar energy system includes a PV electricity generating system.

The proposal is not in a prescribed residential zone and as such is permissible with consent.

Electricity generation is prohibited within RU1 Primary Production under the *Junee Local Environmental Plan 2012*, however the ISEPP allows the development for the purpose of a solar energy system on any land with consent, which overrides the local provisions.

6.1.4 Roads Act 1993

The *Roads Act 1993* (Roads Act) provides for the classification of roads and for the declaration of the Roads and Maritime Services (RMS) and other public authorities as road authorities for both classified and unclassified roads. It also regulates the carrying out of various activities in, on and over public roads.

The need for upgrade works on local roads would be considered as part of the traffic assessment conducted for the proposal. Approval from the roads authority (RMS and/or Junee Shire Council) would be required under Section 138 of the Roads Act to erect a structure or carry out a work in, on or over a public road.

6.1.5 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* relates to the conservation of biodiversity. The Act repeals the *Threatened Species Conservation Act 1995*, the *Nature Conservation Trust Act 2001* and the animal and plant provisions of the *National Parks and Wildlife Act 1974*. The Act commenced on the 25th of August 2017.

The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, consistent with the principles of the ecological sustainable development.

The new act brings in changes to biodiversity survey and assessment and offset methodologies. It also requires specific consideration of irreversible impacts. The proposal would impact on native vegetation and biodiversity values. Given the newness of this act, extensive consultation with OEH would be undertaken during the survey and assessment of the project.

6.1.6 Heritage Act1977

This Act aims to conserve heritage values. The Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's Local Environmental Plan or listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 89J of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the *Heritage Act 1977* would not be required for a State Significant Development.

The potential to impact environmental heritage is discussed in Section 7.1.5 of this report. Consultation would be undertaken with Junee Shire Council and the assessment would be undertaken in accordance with OEH guidelines for *Assessing Heritage Significance (Heritage Office* (former), 2001).

6.2 LOCAL INSTRUMENTS

6.2.1 Junee Local Environmental Plan 2012

The proposal sites are located within the Junee Local Government Area (LGA), which is subject to the provisions of the *Junee Local Environmental Plan 2012.* The proposal is located across the following land zones:

- The array area:
  - **RU1 Primary Production**: Electricity generation is prohibited within RU1, however the ISEPP allows the development for the purpose of a solar energy system on any land with consent, which overrides the local provisions.

- The transmission line corridor:
  - **RU1 Primary Production:** Electricity generation is prohibited within RU1, however the ISEPP allows the development for the purpose of electricity an transmission or distribution network to be carried by or on behalf of an electricity supply authority or public authority without consent on any land, which overrides the local provisions.

6.3 COMMONWEALTH LEGISLATION

6.3.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of the Environment and Energy (DoEE). Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minster.

The EPBC Act identifies the following nine MNES:

- World Heritage properties.
- National heritage places.
- Ramsar wetlands of international significance.
- Threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- Water resources (in relation to coal seam gas development and large coal mining development).

Actions that adversely affect these matters may be deemed to be a 'controlled action' under the Act.

A search of the Commonwealth Protected Matters Search Tool (coordinate search, undertaken on 19 April 2018) indicates that there are no World Heritage or National Heritage areas or items within the proposal sites. Two areas of Commonwealth land were identified, and no Commonwealth heritage places were identified.

Search results returned four Wetlands of International Importance. Due to the distance approximately 600-700 km upstream of the proposal sites, these have been confirmed as not being relevant to the proposal.

Two threatened ecological communities were returned from the search, including Grey Box (*Eucalyptus macrocarpa)* Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Endangered) and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered). Both of these species occur within the proposal site; more relevant to the transmission line corridor where direct impacts would be less than on the array site, where nearly all native vegetation has been previously cleared. Twenty-two threatened species and 11 migratory species were also returned from the Protected Matters Search. The proposal sites provide suitable habitat for several of these species. Again, habitat is more extensive in the transmission line corridor where direct impacts would be less than on the array site, where nearly all habitat values have been previously removed. Further flora and fauna studies would confirm whether impacts to these entities would occur, during the preparation of the EIS.

At this stage, the need for a Commonwealth referral is considered unlikely. Any relevant MNES identified in the proposal sites will be considered high constraints to be avoided if possible. It is noted that at this time, the Biodiversity Assessment Method and Biodiversity Offsets Scheme, under the BC Act, are not endorsed by the Commonwealth.

7 PRELIMINARY ENVIRONMENTAL ASSESSMENT

7.1 ASSESSMENT OF KEY ISSUES

A summary of the key environmental issues of relevance to the proposal site and its development is provided in Section 7.1. They include:

- Biodiversity
- Visual amenity and landscape character
- Community and socio-economic impacts
- Aboriginal heritage
- Non-indigenous heritage
- Noise
- Land use
- Watercourses and hydrology
- Soils

7.1.1 Biodiversity

An analysis of preliminary biodiversity constraints within the Illabo Solar Farm proposal site was undertaken by NGH Environmental (NGH, 2017) based on the following information sources:

- Existing threatened species listings under the BC Act and EPBC Act.
- Existing records of threatened species sightings within the proposal site, as recorded in the BioNet Database (OEH).
- Department of the Environment and Energy Protected Matters Search Tool (nationally threatened species listed under the EPBC Act).
- A field survey, undertaken in December 2017 by a senior ecologist.

General composition and condition

A field survey was undertaken on the 7th December 2017 by an ecologist and an assistant to determine plant community types and the condition of native vegetation.

The proposal site has been extensively cleared of trees and highly modified for agricultural purposes. Most of the proposal site is used for cropping and grazing. Several native tree plantings occur throughout the proposal site, predominantly in the transmission corridor. Older plantings are comprised of rows of exotic species such as Pepper Tree (**Schinus molle*) and Pine trees (Pinus species) located in both the transmission corridor and array area.

In the transmission corridor, remnant patches of Blakely's Red Gum - Yellow Box Woodland occur on the slopes and remnant patches of River Red Gum Woodland occur along the creek and drainage lines. Some small patches of Grey Box woodland also occur throughout the transmission corridor. These remnant areas

are mostly highly disturbed and lack a native understorey due to heavy grazing and pasture improvement. One grazing paddock on the hill slopes within the transmission corridor has retained native grasses and forbs such as *Austrostipa scabra, Rytidosperma* sp. and *Sida corrugata* but lacks any overstorey species.

Areas of remnant vegetation however, still provide fauna habitat and fauna movement corridors. Hollow bearing trees and a good condition overstorey could provide habitat for several threatened woodland birds including the Superb Parrot (*Polytelis swainsonii*), and mammals including the Koala (*Phascolarctos cinereus*) and Corben's Long-eared Bat (*Nyctophilus corbeni*). This habitat is more relevant to the riparian corridor and transmission line route that to the array site. The Superb Parrot and Koala are species credit species within the NSW Biodiversity Assessment Methodology (BAM – OEH 2017) and Corben's Long-eared Bat is a Matter of National Environmental Significance under the EPBC Act. Impact avoidance and minimisation will be considered for habitat that could be used by these species. Residual impacts will be offset in accordance with the Biodiversity Offset Scheme.

One creek occurs on the proposal site in the array area. Waterways and riparian corridors provide aquatic habitat and fauna movement corridors. Permanent infrastructure will be minimal in substantive waterways, and where required designed using best practice design process measures.

Threatened communities and species with potential to occur

A search of the EPBC Act Protected Matters Search Tool was undertaken within a 10 km buffer of the proposal site. The search identified two Threatened Ecological Communities:

1. Grey Box (*Eucalyptus macrocarpa)* Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Endangered)
2. White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered).

The search also identified 22 threatened species and 11 migratory species that are either known to occur or have the potential to occur in the search area including:

- 9 bird species:
    - Regent Honeyeater (*Anthochaera phrygia*)
    - Australasian Bittern (*Botaurus poiciloptilus*)
    - Curlew Sandpipe (*Calidris ferruginea*)
    - Painted Honeyeater (*Grantiella picta*)
    - Swift Parrot (*Lathamus discolor*)
    - Malleefowl (*Leipoa ocellata*)
    - Eastern Curlew, Far Eastern Curlew (*Numenius madagascariensis*)
    - Superb Parrot (*Polytelis swainsonii*)
    - Australian Painted Snipe (*Rostratula australis*)
- 6 flora species:
    - Yass Daisy (*Ammobium craspedioides)*
    - *Austrostipa wakoolica*
    - Crimson Spider-orchid, Maroon Spider-orchid (*Caladenia concolor*)
    - Tarengo Leek Orchid (*Prasophyllum petilum*)
    - Small Purple-pea, Mountain Swainson-pea, Small Purple Pea (*Swainsona recta*)
    - *Tylophora linearis*
- 3 mammal species:
    - Corben's Long-eared Bat, South-eastern Long-eared Bat (*Nyctophilus corbeni*)
    - Koala (*Phascolarctos cinereus* (combined populations of Qld, NSW and the ACT))

    - Grey-headed Flying-fox (*Pteropus poliocephalus*)
- 2 fish species:
    - Murray Cod (*Maccullochella peelii*)
    - Macquarie Perch (*Macquaria australasica*)
- 2 reptiles species:
    - Pink-tailed Worm-lizard, Pink-tailed Legless Lizard (*Aprasia parapulchella*)
    - Striped Legless Lizard (*Delma impar*)

A search of the OEH Wildlife Atlas database for the coordinates North: - 34.79, West: 147.76, East: 147.86, South: -34.89, identified 10 threatened species that have been recorded within 10 km of the proposal site. These include:

- Black Falcon (*Falco subniger*)
- Little Lorikeet *(Parvipsitta pusilla)*
- Superb Parrot (*Polytelis swainsonii*)
- Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*)
- Speckled Warbler (*Pyrrholaemus sagittatus*)
- Grey-crowned Babbler (*Pomatostomus temporalis*)
- Varied Sittella (*Daphoenositta chrysoptera*)
- Dusky Woodswallow (*Artamus cyanopterus*)
- Scarlet Robin (*Petroica boodang*)
- Flame Robin (*Petroica phoenicea*)
- Diamond Firetail (*Stagonopleura guttata*)
- Yellow-bellied Sheathtailed Bat (*Saccolaimus flaviventris*)
- Southern Myotis (*Myotis aelleni*)

During the rapid surveys to date, two threatened species have been recorded within the proposal site including the Black Falcon (*Falco subniger*) and the Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*). Given the extensive modification of the proposal site, in comparison to more intact riparian vegetation and offsite remnants, it is unlikely the site will provide important habitat for these or other listed species but targeted surveys will consider this question in detail, during the EIS preparation.

Plant Community Types and Threatened Ecological Communities verified during field investigations

Based on existing vegetation mapping and the initial field inspection, vegetation within the proposal site was assigned to Plant Community Types (PCTs) in accordance with the Vegetation Information System Classification Database. PCTs were determined based on the presence of diagnostic species identified in the site survey. The results are preliminary in nature and would be refined following detailed vegetation survey of the site, and the undertaking of Floristic Plots in accordance with the BAM.

PCTs identified within the proposal site are:

1. **PCT 76** - Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion.
2. **PCT 277 -** Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.

3. **PCT 7 -** River Red Gum – Warrego Grass – herbaceous riparian tall open forest wetland mainly in the Riverina Bioregion.

Subject to further assessment, areas of PCT 76 and PCT 277 within the study may be consistent with the following Threatened Ecological Communities:

- Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (BC Act, Endangered).
- Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (EPBC Act, Endangered).
- White Box Yellow Box Blakely's Red Gum Woodland (BC Act, Endangered).
- Box Gum Grassy Woodland and Derived Grasslands (EPBC Act, Critically Endangered).

The preliminary vegetation mapping is provided below.

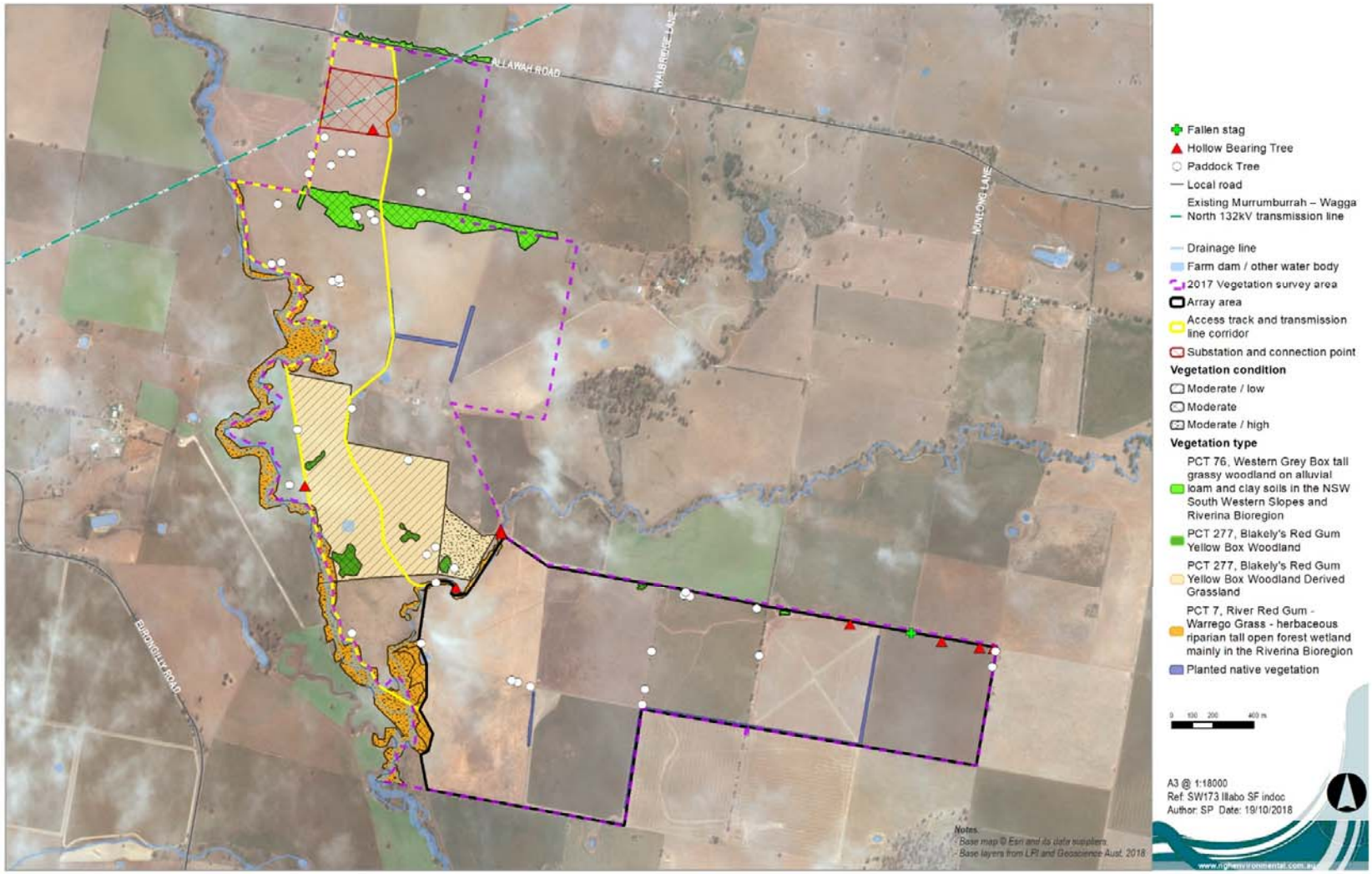

Figure 7-1 Preliminary mapping of Plant Community Types (PCT's) in the proposal site

Constraints and need for further assessment

To inform the early project planning process and investigation strategies, biodiversity features within the proposal site have been mapped to areas of High, Moderate, or Low constraints. Refer to Section 8.

As part of the EIS, the detailed ecological surveys and further investigation and assessment will be undertaken in the format of the Biodiversity Development Assessment Report (BDAR) in consultation with OEH. The BDAR will determine the project's offset requirement prior to project approval.

7.1.2 Visual amenity and landscape character

The proposal site is in a rural area, with the closest town being Illabo which is about 6 km north west of the proposal site. The topography of the proposal site is flat with elevation ranging from about 246 m to 266 m. Parts of the solar farm, in particular the connection infrastructure may be visible to neighbouring houses and adjacent road users of Allawah Road and Kiaree Lane where existing vegetation is not present. The proposal has the potential to attract interest from residents both in Illabo and on nearby large lot agricultural land. It is considered unlikely that the proposed infrastructure would be discernible at distances greater than 1km from the site from most vantages.

There are nine potentially affected residents within 2 km of the proposal site, two of which are owned by the involved land owner. Kiaree Lane located to the south east of the proposed array area has limited existing vegetation that may provide some screening to road users. Aerial imagery indicates screening from Eurongilly Road may be provided by existing vegetation along the riparian corridor of Billabong Creek for residences to the west of the transmission corridor. Similarly, existing vegetation along the riparian corridor of Merrybundinah Creek may provide some screening for road users travelling along Allawah Road to the north of the transmission corridor.

An assessment of the level of visual impact would be undertaken as part of the EIS process. The EIS would consider both the potential for the solar farm to affect local landscape character and to affect any specific individual receivers. Consultation will be undertaken broadly to understand the local values of the area, including visual characteristics valued by the community. Additional consultation with specific affected residences would be undertaken to identify the nature and significance of impacts and the need for mitigation measures.

Glare and reflections from solar farm infrastructure would be investigated. It is noted that solar panels are designed to absorb as much sunlight as possible. They therefore reflect a very low percentage of the light and are generally not considered likely to result in glare or reflections that would affect traffic or nearby receivers. However, it is understood that this has been raised for other solar projects as an issue of interest to neighbours.

Constraints and need for further assessment

The location of nearby receivers has been mapped in Figure 7-2 . From aerial imagery, it is estimated that three receivers may have a view of the array area (i.e. excluding transmission corridor). Assessment of landscape character, public vantage points and would be the focus of a Visual Impact Assessment (VIA) in the EIS. Additionally, the VIA will consider aviation impacts due to the close proximity of the private airstrip (addressed in Section 7.2).

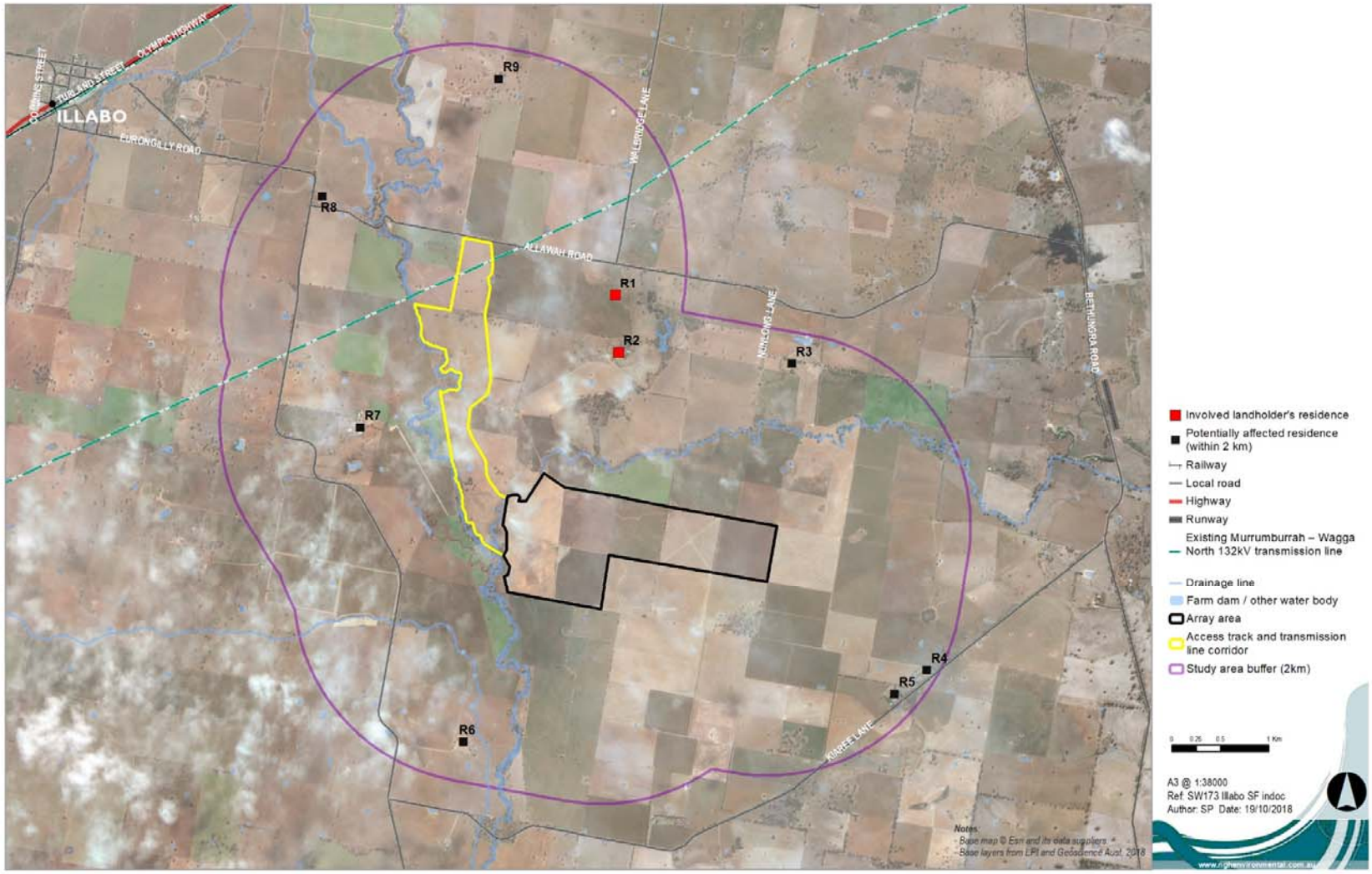

Figure 7-2 Location of receivers within 2 km of the proposal site

7.1.3 Community impacts, social and economic impact

The proposal site is located in the Junee LGA, which covers 2030 square kilometres. Census data indicates the population in 2016 was 6,295, with a median age of 40. The Junee LGA is located in the Riverina region of NSW and includes the localities of Junee and Illabo as discussed in Section 2.1, along with Bethungra and Wantabadgery.

The region brings visitors to experience various events and attractions including ghost tours at the Monte Cristo Homestead, the Roundhouse Museum and Railway Museum, historic Gold Trails, and the Licorice and Chocolate Factory. The town is also host to an annual speedway event and country music stampede.

The solar farm may act as an additional draw for tourism, located near to a main transport corridor.

The Illabo Solar Farm would create about 100 jobs during the ca. 12 - 24 month construction phase and provide 1-2 ongoing full-time jobs during its operation for residents of Illabo, Junee and Wagga Wagga. Additionally, the solar farm would provide economic stimulus to Illabo, Junee and Wagga Wagga during construction due to increased need for accommodation, retail and hospitality services. This increase may also place pressures on local services and additional traffic may have adverse impacts on local residents and tourists.

Constraints and need for further assessment

The EIS would assess potential social and economic impacts of the proposal; beneficial and adverse. It would investigate ways to spread the benefits of the project into operation. Detailed investigation and consultation with affected landowners and broader stakeholders would be undertaken in this regard.

A CCP has been prepared to provide a framework to engage with the community about the proposal and ensure opportunities to provide input into the assessment and development process are understood.

7.1.4 Aboriginal heritage

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was carried out on 23 April 2018, centred on the proposal site and with a buffer of approximately 1 km. Seven Aboriginal sites were identified near the proposal site. The closest is 3.8 km away. No Aboriginal places have been declared in or near this location[1].

In terms of landscape features that may indicate higher Aboriginal cultural heritage significance, the proposal site features land within 200m of waters, however it does not contain lands:

- Within a sand dune system;
- On a ridge top, ridge line or headland;
- Within 200m below or above a cliff face; or
- Within 20m of or in a cave, rock shelter or a cave mouth.

Therefore, at this stage the site does not appear to contain features that may indicate higher Aboriginal cultural heritage significance.

[1] Aboriginal sites and places are both registered however Aboriginal places do not contain archaeological remains and are considered to have higher values of significance to Aboriginal people.

Constraints and need for further assessment

An Aboriginal Cultural Heritage Assessment Report and associated stakeholder consultation process would be completed as part of the EIS. This would include consultation with the Wagga Wagga Local Aboriginal Land Council. If any Aboriginal Heritage sites are identified that may be potentially affected by the proposal site, mitigation measures would be determined in accordance with the *Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

7.1.5 Non-indigenous heritage

Non-indigenous heritage database searches were conducted on 19 April 2018 and included:

- The NSW State Heritage Inventory (SHI) (for items listed on the State Heritage Register, Heritage and Conservation Registers of State Government agencies and local heritage items on the Junee LEP).
- The Australian Heritage Database (for items listed on the National and Commonwealth Heritage Lists and World Heritage List).

Within the Junee LGA, 151 items of heritage significance are listed by local government and state agencies and 14 items were listed under the *NSW Heritage Act*, the closest being the Ulandra Nature Reserve in Bethungra, 13 km from the site. No non-indigenous heritage sites of State, National or Commonwealth significance were listed at the proposal site.

Constraints and need for further assessment

Consideration of potential dust and vibration impacts on items near to the haulage route should be investigated in more detail as part of the environmental assessment. The potential to impact non-listed heritage items would also be investigated by site inspection; old land holdings can contain buildings or structures of significance. Protections for such features would be commitments of the EIS, as required.

7.1.6 Noise

Aerial imagery shows nine potentially affected receivers within 2km of the proposal site, two of which are owned by the potential land owner and are therefore considered 'project involved'. The construction phase would generate the most noise impacts caused by construction vehicles and machinery. Much less noise impact would result from the operational phase of the solar farm generated by the solar tracking system (if that is what is chosen), the substation and switchgear and any maintenance works undertaken). Nearby residences may be impacted by dust, vibration and noise generation associated with the construction phase. This is particularly relevant to those located near the northern boundary of the site where access is proposed.

Constraints and need for further assessment

A construction and operational noise and vibration assessment will be undertaken as part of the EIS to assess potential noise impacts for affected residents. The assessment will be undertaken in accordance with the Interim Construction Noise Guideline (DECC, 2009), NSW Industrial Noise Policy (EPA, 2017), Assessing Vibration: A Technical Guideline (DECC, 2006) and NSW 'Road Noise Policy' (DECCW, 2011). Given the low number of nearby receivers, mitigation strategies to manage noise impacts acceptably are considered highly feasible. Refer to the constraints assessment in Section 8.

7.1.7 Land use

During the operation life of the solar farm, the main land use on the proposal site would be converted from agricultural use to electricity generation. This has the potential to impact biodiversity, socio-economic impacts, as discussed in Section 7.1.1 and Section 7.1.3 as well as quality and quantity of soil and water discussed in Section 7.1.8 and Section 7.1.9.

The land comprising the proposal site is used on a rotational basis for cropping and pasture to support the agricultural enterprises carried out on the farm as discussed in Section 2.3. When in a pasture rotation, the paddocks have been utilised for the grazing of livestock. When in a cropping rotation, the paddocks are utilised for grain or oilseed production. The paddocks rotate between Lucerne (alfalfa), Barley, Canola, Wheat, Oats and Lupins. Over the past five years, Lucerne as pasture has been most frequently grown. Historically, frost and unreliable rainfall have had severe negative impact on cropping success. Assuming a 'medium' scenario for production and commodity price, the paddocks located within the array area yield approximately $253/ha cropping for wheat. As pasture, these paddocks carry approximately 10-12 dry sheep equivalents.

The proposal site is not mapped as Biophysical Strategic Agricultural Land (BSAL), which is land identified to have high quality soil and water resources capable of sustaining high levels of productivity. It is estimated that the income potential of the site under the proposed solar electricity generation will yield substantially more than the current agricultural income. This would provide greater security to the landholder who will continue to farm the remaining 80% of their property.

A search of the Department of Planning and Environment MinView on 19 April 2018 found the proposal site to have one current mineral title. Exploration licence 8470, which occupies the proposal site in its entirety, is held by Gilmore Metals Pty Ltd and expires on 6 October 2021. Consultation would be required with the mineral title holder. Given the highly reversible nature of the project, this is considered a manageable constraint; once decommissioned the site will be largely returned to existing or alternative land uses, with little impact on soil or subsoil resources.

The riparian corridor of Billabong Creek to the west of the transmission corridor is mapped as Crown Land. Additional parcels of crown land are in the vicinity of the site, and are being investigated further due to discrepancies. No infrastructure is proposed in areas mapped as Crown Land.

One transmission line (Murumburrah to Wagga North 132 kV) transects the transmission corridor in the northern section. This would be used to connect to a substation proposed to be built within the transmission corridor.

Constraints and need for further assessment

The impact on agricultural production in the locality and region would be assessed in detail in the EIS.

As above, it is noted that, where pile driving is used to install PV array mounts on land of relatively low relief, the soil disturbance is very low and therefore the reversibility of the project, with regard to future land uses, is very high. Excavation and footings are generally limited to discrete footings for inverters, switch station and office buildings. The largest soil disturbance is usually limited grading to establish perimeter tracks. Building-in strategies to retain land use options after the decommissioning of the solar farm, will be part of the assessment process.

The impact on Crown Land will be assessed in detail within the EIS.

7.1.8 Watercourses and hydrology

Two dams occur within the array area in the south western portion. One watercourse; Merrybundinah Creek (a tributary of Billabong Creek) traverses the array area in the south western portion. The transmission corridor is bound by the Billabong Creek, which is fed by the Murrumbidgee River within the Murray-Darling Basin. Both Merrybundinah Creek and Billabong Creek are mapped as areas of key fish habitat; however neither are flowing. A water crossing would be required to connect the array area to the transmission corridor and would be constructed in line with specialist input and the *Guidelines for Controlled Activities on Waterfront Land* (DPE, 2012).

The Junee LEP 2012 does not identify the proposal site as flood prone.

Constraints and need for further assessment

The EIS would assess the impacts to waterways and include appropriate mitigation measures, such as buffering these areas for avoidance, adherence to best practice guidelines (Guidelines for Controlled Activities on Waterfront Land; DPI 2012) where avoidance is not possible[2].

7.1.9 Soils

Two soil landscapes occur within the proposal site and their limitations are described in Table 7-1.

Table 7-1 Soil landscape limitations

Soil landscape	Specific soil limitations
Reynolds ('ry')	• Sheet erosion risk • Potential discharge area (localised) • Moderately erodible soils. Moderate to high hazard on longer slopes with hardsetting surfaces. • Moderate fertility.
Ironbong Creek ('ig')	• Seasonal waterlogging (localised) • Sheet erosion hazard • Gully erosion hazard (localised) • Moderate erodibility and erosion hazard generally • High erodibility and erosion hazard for dispersible subsoils • Poor drainage (localised) • Engineering hazard (localised) • Flood hazard (localised) • Moderate fertility • Nutrient availability limited by alkalinity

The array area land is mapped as very high capability (Class 2) and the transmission corridor is mapped as high capability land (Class 3), as described in Table 7-2.

[2] Water front land is defined by the Water Management Act as land within 40m of the bank of incised channels. Works within water front land trigger Control Activity Approval, although SDD is exempt, best practice measures will be to reference the Controlled Activity Guidelines for any works in these areas (DPI 2012).

Table 7-2 Land and Soil Capability

Land and soil capability class	General definition
Class 2 (includes 'ig' soil landscape and 'ry' landscape)	Land has slight limitation. These can be managed by readily available, easily implemented management practices. Land is capable of most land uses and land management practices, including intensive cropping with cultivation.
Class 3 (includes 'ry' landscape)	Land has moderate limitations and is capable of sustaining high impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation.

The proposal site has been developed with reference to consultation undertaken with the current landowner. Although the proposal site land is mapped as Class 2 and 3, severe droughts in the region have resulted in reduced quality and quantity of crops in recent times. It is possible that the soil and land capability class is not indicative of the actual capability of the proposal site; the low relief landscape and proximity to waterways may have contributed to mapping of a higher classification level.

A search of the NSW OEH Contaminated Sites Register (NSW Government, 2017a) on 20 April 2018 did not identify any sites within the Junee LGA. The proposal site does not appear on the List of NSW Contaminated Sites notified to the EPA (NSW Government, 2017b), as of the 9 February 2018. It is noted that the proposal site has a history of agricultural land use and as such, agricultural sites may contain buried rubbish including contaminants such as herbicides that may be encountered during excavation.

Constraints and need for further assessment

It is considered unlikely that substantive contamination is present within the proposal site and therefore no detailed investigation is likely to be required within the EIS. Management of ground cover during operation and restoration of the proposal site's land capability would be recommended by the EIS. The requirement for baseline soil mapping would be a consideration in the EIS.

7.2 OTHER ENVIRONMENTAL ISSUES

Issue	Existing environment	Potential Impacts	Investigation strategies
Access and traffic	The Olympic Highway intersects Brabins Road at Illabo town centre. About 200 m south Brabins Road intersects Eurongilly Road. The intersection of Eurongilly Road and Allawah road is about 2 km from the proposal site. The Olympic Highway would be the major transport route for haulage and site vehicles during construction and operation of the project. Access to the proposal site is likely to be via Allawah Road which passes through the town of Illabo and bounds the transmission corridor to the north. An access track would be constructed as part of the works to access the proposal site.	Establishing access to the proposal site may require construction of access tracks, upgrades and intersection treatments. Management of traffic, for safety as well as road pavement conditions will be required. One access option is being considered for an access track location via Allawah Road. This may have the potential to impact PCT's mapped as a high constraint. During construction, there may be associated impacts to nearby receivers such as dust, vibration and noise generation.	Access options would be further investigated during the preparation of the EIS. Construction traffic impacts would be considered in the EIS and take into consideration existing traffic volumes and any requirements from the roads authority. The mitigation measures would require a Traffic Management Plan including haulage routes to be prepared. Offset strategies would be further investigated and mitigation measures determined in the EIS.
Hazards and risks – Electric and Magnetic Fields (EMF)	Existing powerlines produce EMFs within their vicinity. Additional infrastructure which forms part of the proposal such as inverters, connecting powerlines and the substation would produce EMFs within the proposal site.	The EMF levels associated with solar infrastructure are well below the guideline for public exposure and would not be expected to have any adverse impact on human health. There can however, be perceived impact for any nearby residents.	The EMF levels of the proposed infrastructure would be assessed as part of the EIS. Standard design provisions are expected to ensure impacts comply with relevant guidelines together with communication of the issue as required.

Issue	Existing environment	Potential Impacts	Investigation strategies
Hazards and risks – Bushfire	The proposal site has been predominantly cleared for agricultural purposes and is not mapped as bushfire prone.	Emergency response protocols will be required in the event of a bushfire. Battery storage has specific risks and mitigation strategies.	The potential to increase risk of bushfire would be assessed in the EIS. Emergency protocols would reflect advice from relevant agencies. Preliminary risk screening in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011) will be undertaken. If the preliminary risk screening and/or DP&E determines the development is "potentially hazardous", a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).
Aviation	A private airstrip is located approximately 700m west of the proposal site. The airstrip is used for both recreation and aerial spraying.	Potential impact on neighbouring farmers that use aerial spraying to manage agricultural enterprises.	The potential to adversely impact on aviation would be assessed in the EIS. Mitigation measures to minimise potential aviation related impacts of the proposal would be prepared as part of the EIS.

8 PRELIMINARY CONSTRAINTS ASSESSMENT

8.1 METHODOLOGY

Preliminary constraints advice has been informed by a desktop review and limited site inspection, undertaken in December 2017. No detailed data collection or analysis has yet been undertaken however, the field assessments included full traverses of the proposal site and vehicle based surveys in the locality. They are considered sufficient to provide preliminary constraints advice to inform further development of the design.

Low, moderate and high biodiversity constraints are defined in Table 8-1, with reference to the 'developability' of the proposal site. Where uncertainty exists, a higher constraint rating has been applied. Further investigation may reduce the constraint level. Biodiversity, residences and waterway constraints are mapped for the proposal site in Appendix A.

Table 8-1 Constraints definitions

Constraint	Definition
Low	Minimal impacts anticipated. Most suitable for development. Standard management protocols would be sufficient to manage any impacts. Least cost for assessment and management of constraints.
Moderate	Impacts should be minimised, where possible. These areas may require specific management protocols and may add some cost and time to the assessment and approval process and subsequent mitigation strategies.
High	Avoid if possible. These areas will be difficult, expensive or may not be possible to obtain approval to develop. They may require costly additional surveys to understand and manage impacts. They may be costly to offset. They may impact the ability to obtain a timely approval.

8.2 RESULTS

8.2.1 Low environmental constraints

In low constraint areas, minimal impacts are anticipated. They contain no sensitive features (waterways, high risk soils, receivers, ecological values) and are most suitable for development.

The inspection has confirmed that these areas are unlikely to generate biodiversity credits or may have very low biodiversity credit requirements if they do. These include areas of:

- Sown pasture areas (not defined as native vegetation) in agricultural zones. They will not require offsets or further investigation for biodiversity impacts.
- Ephemeral waterways with little if any hydraulic function.

It is noted that being annual, existing onsite crops would need to be replaced by a more perennial ground cover prior to construction, to reduce erosion and dust issues once the panels are installed. These issues will require a mitigation strategy and may require specialist input.

Most of the proposal site is considered to be a low constraint. These areas are shown on Appendix A (in that they are not mapped as either moderate or high constraints).

8.2.2 Moderate environmental constraints

These include:

- Works in or that affect **waterways.** These may require additional justification and management. Construction practices will be subject to best practice methodologies and rehabilitation requirements. Works that may affect local hydrology are likely to require specialist input from a hydrologist. Validation of the nature of waterways will be undertaken to differentiate waterways from overland flow areas.
- **Native vegetation** with moderate biodiversity value. These areas do not necessarily need to be avoided but are likely to generate biodiversity credits that require offsetting. These include areas of;
    - Remnant River Red Gum Woodland (PCT 7) with a disturbed understorey.
    - Remnant Blakely's Red Gum – Yellow Box Woodland derived grassland in moderate low condition.
    - Isolated paddock trees with no hollows.
    - Planted native vegetation.

These areas of native vegetation are primarily within the transmission corridor and are not in good condition. The areas will require a mitigation strategy and may require some offsets depending on access track design and location and have been identified as a moderate constraint on the constraints map in Appendix A.

8.2.3 High Environmental constraints

These include:

- Named **waterways** with visible beds and banks. Watercourse with visible signs of current erosion and/or previous erosion control works that should be contained within a riparian corridor to enable treatment and ongoing maintenance.
- Development within the watercourse could result in adverse hydraulic impacts or increase erosion potential.
- Potential **residences** in close proximity of the site (requires ground validation). Nearby receivers may be affected by visual impact, traffic noise and vibration and dust. Verification of impacts and consultation will be undertaken to ensure all impacts are acceptably mitigated.
- **Aboriginal Heritage**: No survey has been undertaken of the site but seven sites were recorded near the proposal site. Any Aboriginal heritage sites/items/etc. identified would be a moderate to high constraint; impacts on sites will require approval. Mitigation strategies can range from avoidance, to salvage programs to more intensive survey including test pits.

- **Native vegetation** with high biodiversity value. If these areas cannot be avoided, they will require justification in the Biodiversity Development Assessment Report (BDAR) and will generate biodiversity credit requirements that require offsetting. It is noted that higher value vegetation will generate greater offset requirements. These include areas of:
    - Remnant Blakely's Red Gum – Yellow Box Woodland (PCT 277) comprising a TEC. May also provide threatened species habitat and require targeted surveys and impact assessment.
    - Remnant Grey Box Woodland (PCT 76) comprising a TEC. May also provide threatened species habitat and require targeted surveys and impact assessment.
    - Remnant Blakey's Red Gum -Yellow Box Woodland derived grassland (PCT 277) in moderate to high condition and comprising a TEC. May provide threatened flora habitat and require targeted survey and impact assessment.
    - Remnant River Red Gum Woodland (PCT 7) with a native understorey. May provide threatened species habitat and require targeted survey and impact assessment.
    - Paddock trees with hollows. May provide threatened species habitat and require targeted surveys and impact assessment.

These areas are primarily within the transmission corridor and will generally require strong justification for impacts and offsets. The areas will require a mitigation strategy and higher value vegetation will require a greater offset. These areas have been identified as high constraints on the constraints map in Appendix A.

9 CONCLUSION

This report has outlined the Illabo Solar Farm proposal and established the planning context of the proposal which is currently in the early planning stage. The proposal would be assessed under Part 4 of the EP&A Act and classed as State Significant Development under *State Environmental Planning Policy (State and Regional Development) 2011*.

Based on this Preliminary Environmental Assessment, an indicative scope for the EIS has been developed, focusing on the key issues:

- Biodiversity
- Visual amenity and landscape character
- Community and socio-economic impacts
- Aboriginal heritage
- Noise
- Land use and cumulative impacts

Secondary issues will also be investigated, commensurate with risk, through desktop investigation. The investigation will include the development of mitigation strategies to manage identified impacts.

The proposal has the potential to result in a number of local and broader benefits including:

- Assisting to meet Australia's future energy demand in a cost effective and sustainable way.
- Generation of clean, renewable energy, sufficient to supply energy to around 24,000 average NSW homes.
- Displacement of approximately 130,000 metric tonnes of carbon dioxide (which is the equivalent of removing 28,000 cars from the roads per year).
- Creation of local job opportunities during construction and operation.

- Establishment of a community fund during the operational period of the project.

Preliminary assessment and consultation with Junee Shire Council, TransGrid, involved landowners, DPE and immediate neighbours has been undertaken. The majority of stakeholders consulted to date are generally supportive of the proposal, and keen to learn more about the project. One landholder raised some concerns which will continue to be addressed actively during the application process. More intensive consultation will continue to understand key community issues and take into account feedback that can be reflected in the final project description and the project's set of environmental commitments (mitigation measures).

Once received, the EIS would be prepared in accordance with the project-specific SEARs.

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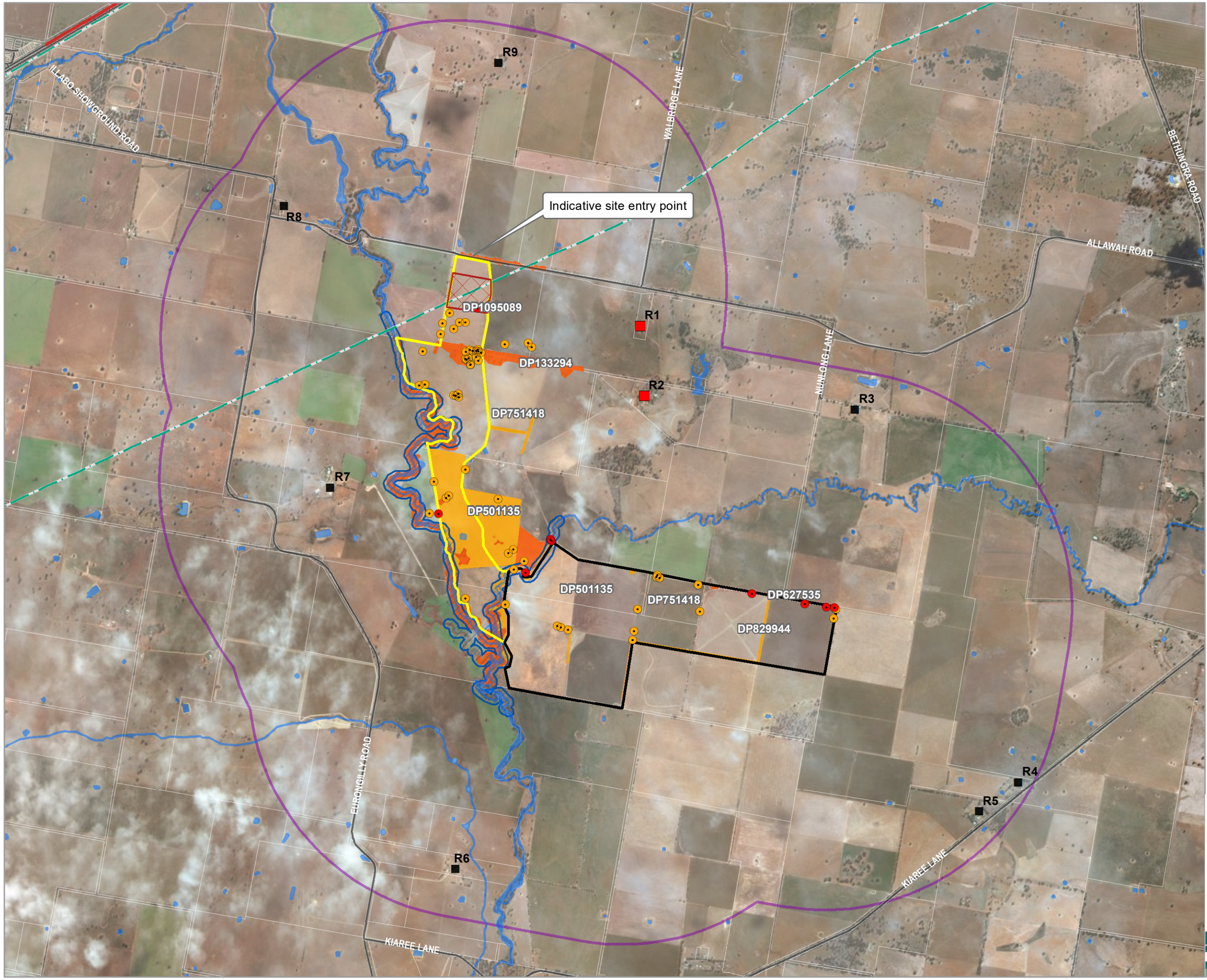
APPENDIX A PRELIMINARY CONSTRAINTS MAPPING



CONSTRAINTS

Illabo Solar Farm

- Involved landholder's residence
- Local road
- Highway
- Railway
- Existing Murrumburrah – Wagga North 132kV transmission line
- Drainage line
- Farm dam / other water body

Infrastructure

- Array area
- Access track and transmission line corridor
- Substation and connection point

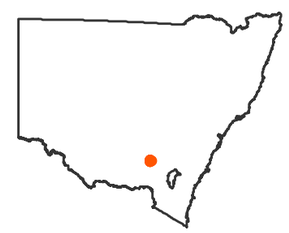
Constraints

- Hollow bearing tree (high)
- Paddock tree (moderate)
- Potentially affected residence (within 2 km)
- Drainage line buffer (40m) (low to moderate)
- Vegetation (high)
- Vegetation (moderate)
- Study area buffer (2 km)

Notes:

- Base map © Esri and its data suppliers.

- Base layers from LPI and Geoscience Aust, 2018



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APPENDIX B COMMUNITY CONSULTATION PLAN

Community Consultation Plan

ILLABO SOLAR FARM

OCTOBER 2018

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Document Verification

Project Title: Illabo Solar Farm

Project Number: 18-153

Project File Name: Illabo Solar Farm CCP

Revision	Date	Prepared by (name)	Reviewed by (name)	Approved by (name)
Draft v1	26/04/18	Louiza Romane	Brooke Marshall	Brooke Marshall
Final v1	23/08/18	Louiza Romane	Brooke Marshall	Brooke Marshall
Final v1	27/08/18	Louiza Romane	Minor changes	Minor changes
Final v1	19/10/18	Louiza Romane	Minor changes	Minor changes

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CONTENTS

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
ARENA	Australian Renewable Energy Agency
CCP	Community Consultation Plan
Cwth	Commonwealth
DPE	Department of Planning and Environment
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cwth)
EIS	Environmental Impact Statement
ha	hectares
km	kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
m	Metres
NSW	New South Wales
SEARs	Secretary's Environmental Assessment Requirements

1 INTRODUCTION

1.1 COMMUNITY CONSULTATION PRINCIPLES

Best practice community consultation involves the community in all decision-making stages of a project. The community plays a role from project conception, through the assessment process and on to project development. Effective community consultation has three important functions:

1. It facilitates deeper understanding of issues and decisions required for the project;
2. It enhances the quality of decisions made for the project;
3. It allows people to contribute to decisions that affect their lives.

Important community engagement principles for a project include:

- Openness – this combats assumptions and misinformation.
- Inclusiveness - consultation should be diverse and representative.
- Effective communication – requiring trust between parties and tools appropriate to the task.
- A communication strategy – this provides clarity about what is being undertaken. On the engagement spectrum, it may include activities that:
    - Inform – provides for one-way communication to deliver information about the project.
    - Consult – provides for two-way communication to seek input into the project.
    - Collaborate and involve – the highest level of engagement, these activities would seek participation in elements of the project design and implementation.
- Early rather than late communication – this will assist to maximise engagement opportunities.
- Accountability – the process should be monitored and evaluated to ensure its aims are being achieved.

1.2 AIM OF THIS PLAN

This Community Consultation Plan (CCP) has been developed for the Illabo Solar Farm proposal.

The aim of the plan is to:

1. **Identify effective methods to inform the community about the Illabo Solar Farm.**
2. **Facilitate engagement with the community, including allowing meaningful contributions from the community into the environmental assessment and project development.**
3. **Obtain social license to operate from the local community, allowing for good long-term relationships with community stakeholders.**

This plan identifies:

- Community stakeholders for the project;
- Issues / risks related to the engagement of each stakeholder group;
- A consultation strategy for each stakeholder group;
- A set of consultation activities against the project development time line.

Effective engagement will require an understanding of community stakeholders and prioritisation of potential impacts. It also relies on the community understanding the project and specific issues of interest to them, to contribute effectively. The focus of the consultation plan will be on providing this understanding and engagement.

1.3 STRUCTURE

The structure of this plan is:

1. Proposal overview
2. Identification of community stakeholders for the project
3. Issue management – what specific issues need consideration?
4. Project based activities – what activities will be undertaken to achieve the goals of this CCP?

1.4 IMPLEMENTATION AND REVISION OF THIS DOCUMENT

This plan has been developed to coincide with the early planning and assessment stages of the Illabo Solar Farm proposal.

If the project is approved, consultation will also be required to continue into the construction and operational phases of the project. These phases will require a new or updated plan, to reflect any changes to consultation objectives. The new plan will also reflect the increasing knowledge gained about the community, making it more tailored to the community. At this stage, only pre-approval project stages are addressed.

1.5 RELEVANT GUIDELINES

This CCP has been prepared with reference to the following guidelines / references:

- *Establishing the social licence to operate large scale solar facilities in Australia: Insights from social research for industry,* Australian Renewable Energy Agency (ARENA).
- *Beyond Public Meetings: Connecting community engagement with decision making,* Twyford Consulting 2007.
- *Large-scale solar energy guideline draft for state significant development 2017,* NSW Government.

2 PROPOSAL OVERVIEW

2.1 ILLABO SOLAR FARM

The proposed Illabo Solar Farm is located south of Allawah Road, about 6 km south east of Illabo, New South Wales in the Junee Local Government Area (Figure 2-1**Error! Reference source not found.**). The Illabo Solar Farm proposal would be located on a dryland mixed farming property of approximately 1040 ha. The development would occupy about 25% of the farm incorporating the following lots:

- Lot 1 DP1095089
- Lot 33 DP 751418
- Lot 1 DP501135
- Lot 2 DP501135
- Lot 2 DP829944
- Lot 37 DP751418
- Lot 1 DP627535

The proposal site would consist of a separate transmission line and array site; both on land zoned RU1 Primary Production. The transmission line itself would occupy a very small area within the proposed investigation corridor which is approximately 122ha incorporating Lot 1 DP1095089, Lot 33 DP 751418, Lot 1 DP501135, Lot 2 DP501135, Lot 2 DP829944 (indicated in yellow in Figure 2-1). The transmission line, primary access and substation would be constructed within the transmission corridor. The solar array area would occupy about 222ha incorporating Lot 2 DP501135, Lot 2 DP829944, Lot 37 DP751418, Lot 1 DP627535 (Indicated in black in Figure 2-1). The solar panel array and ancillary infrastructure would be constructed within the array area.

The 132kv Murrumburrah – Wagga North transmission line would be used to connect the proposed solar farm to the national grid via a new 132 kV substation, proposed as part of this project. Primary access would be via Allawah Road.

The land surrounding the proposal site includes cultivated agricultural land, grazed land and Crown Land. The closest national park is the Ulandra National Park approximately 10km from the proposal site; as the national park is not in close proximity to the site, it is not considered further in this assessment. The primary industry for employment in the Junee LGA is meat processing, followed by correctional and detention services and then grain-sheep or grain-beef farming (ABS 2016).

2.2 CONSTRUCTION

The Illabo Solar Farm would be expected to have an operational life of 30 years. The construction phase of the proposal would take between 12 and 24 months. After the initial 30 year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the proposal to its existing land capability, or repowered with new PV equipment subject to landowner planning consents.

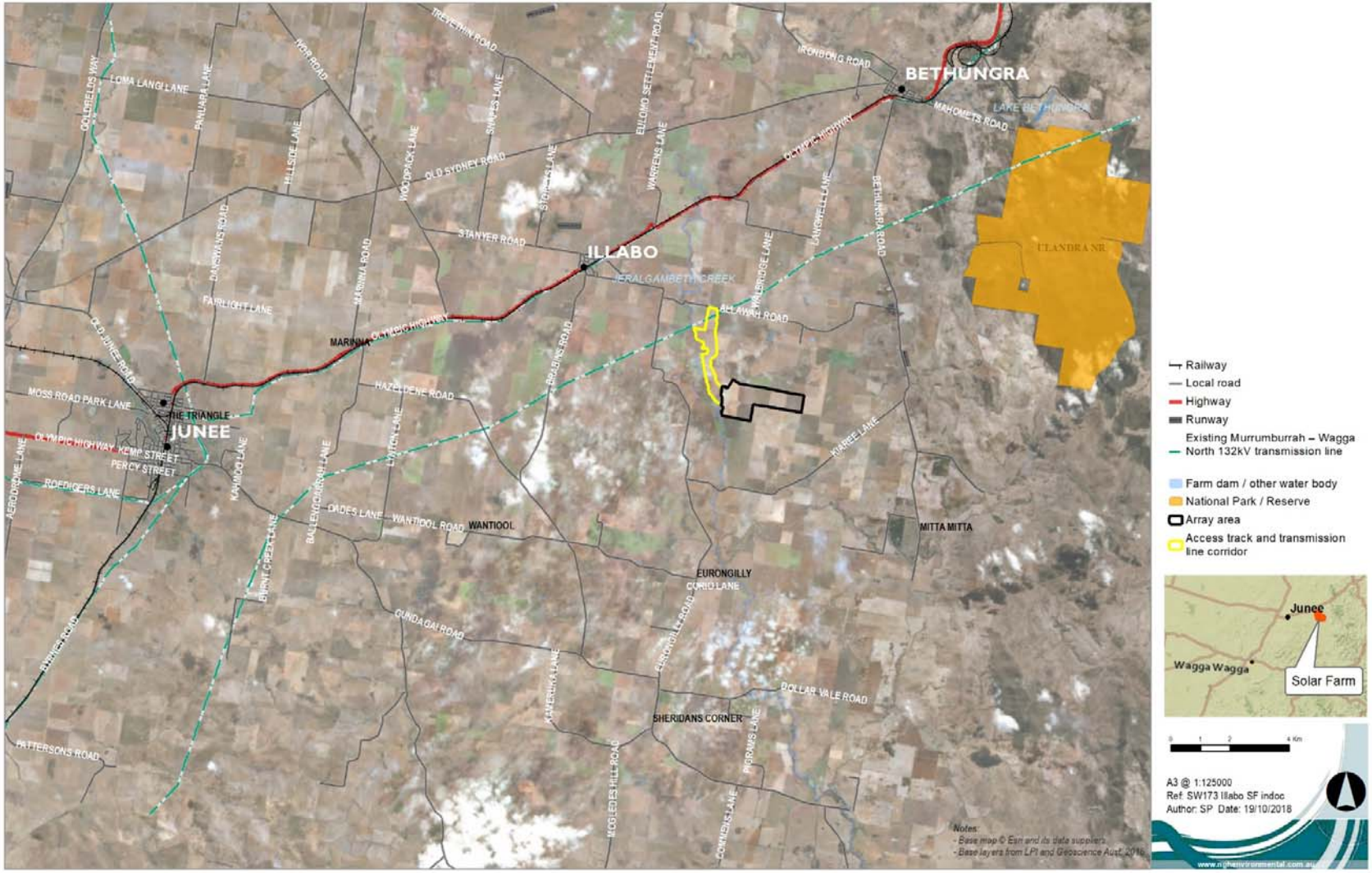

Figure 2-1 Proposal site location

3 COMMUNITY PROFILE

Understanding the makeup and values of a community is essential to finding effective ways to reach the community. It is also important to understand ways which project may impact the community. This may not be limited to the construction and operational stages of a project but may also include the pre-lodgement assessment phase, as the project is being shaped. This section provides a broad overview of the community demographics in the Junee Local Government Area (LGA) and the local townships of Junee, Illabo and Bethungra.

3.1 JUNEE LOCAL GOVERNMENT AREA

The proposal site is located within the Junee Local Government Area (LGA) in the Riverina region of New South Wales. The LGA covers an area of 2,030 square kilometres. Table 3-1 summarises the socio-economic profile of the Junee LGA. The demographic trend shows a small increase in population size and the recognition of manufacturing (meat processing) as a key employer.

Table 3-1 Statistical overview of Junee LGA (ABS, 2011; ABS, 2016)

Statistic	2011	2016
Population	5,878	6,295
Average Age	39	40
Gender Split	56.8% male; 43.2% female	56.8% male; 43.2% female
Aboriginal/Torres Strait Islander	6.7%	7.8%
Main Industries	Sheep, beef cattle and grain farming; public order and safety services; school education.	Meat processing; correctional and detention services; grain-sheep or grain-beef cattle farming.
Unemployment Rate	5%	4.8%
Number employed	2,267	2,431
SEIFA Index [1]	932	No data

Some of the main community and economic features of the Junee LGA are:

- Education facilities, including 4 primary schools, 1 high school, 2 preschools.
- Health facilities, including a hospital (with residential aged care) and medical centre in Junee.
- Tourism attractions, including wine tasting, Junee liquorice and chocolate factory, Junee roundhouse railway museum, lavender fields, Junee tourist park, heritage trails, heritage museums and ghost tours at the Monte Cristo Homestead in Junee.
- Natural attractions, including Park Dam, Bethungra Dam and Reserve, Junee Wetlands, Sandy Beach and Broadway Gardens.

[1] Socio Economic Indexes for Areas (SEIFA) is a suite of indexes that have been created by the Australian Bureau of Statistics (ABS) from social and economic Census information. Each index ranks geographic areas across Australia in terms of their relative socio-economic advantage and disadvantage, with LGA scores ranging from 121 (most disadvantaged) to 1,193 (least disadvantaged).

- Transport services, including trains and coaches to Wagga Wagga and Cootamundra which both have airports providing flights to Sydney.
- Recreational and sporting facilities, including the Junee Junction Recreation and Aquatic Centre, Illabo Motorsports Park, tennis courts and Junee golf course.
- Community facilities, including showgrounds in Junee and Illabo, Junee Community Centre, parks, four churches in Junee and the Junee library.
- Clubs, including tennis club, ex-services memorial club, clay target gun club and special interest groups such as VIEW (voice, interests and education of women).

Figure 3-1 Illabo rest stop (left) and Monte Cristo Homestead (right)

3.2 NEARBY LOCALITIES

The proposal site is located near the following towns:

- Illabo; located about 5.6 km north west
- Junee located about 18 km west
- Bethungra located about 11.3 km north east
- Wagga Wagga located about 50 km south west

Table 3-2 outlines the socio-economic profiles of these nearby localities. Illabo is the smallest town and is differentiated by slightly higher unemployment rate, slightly older median age of population and the importance of primary education as a main employer.

Table 3-2 Statistical overview of Junee, Illabo and Bethungra (ABS, 2016)

Statistic	Junee	Illabo	Bethungra	Wagga Wagga
Population	4,922	144	164	54,411
Median Age	39	47	40	35
Gender Split	58.6% male; 41.4% female	47.3% male; 52.7% female	52.1% male; 47.9% female	48.5% male; 51.5% female
Aboriginal/Torres Strait Islander	9.1%	4.3%	3.1%	5.9%
Main Industries	Meat processing; correctional and detention services; local government administration.	Grain-sheep or grain-beef cattle farming, sheep farming (specialised), primary education.	Grain-sheep or grain-beef cattle farming; sheep farming (specialised); beef cattle farming (specialised).	Hospitals; defence; higher education.

Statistic	Junee	Illabo	Bethungra	Wagga Wagga
Unemployment Rate	5.9%	6.8%	4.5%	5.8%
Number Employed	1,731	73	89	27,270
Population Increase since 2011	7.5%	No data	No data	4%

3.2.1 Illabo

Illabo is the closest locality to the Illabo Solar Farm proposal site. The village is about 5.6 km north west of the proposal site, 48 km north east of Wagga Wagga and 140 km north west of Canberra. Illabo has a Public Primary School, hotel and general store and post office.

Illabo hosts a range of events that bring tourists to the area including the Illabo show, Country Music Stampede and Vintage Speedway Event. Illabo also makes up part of the Junee LGA self-guided heritage tours and drives.

3.2.2 Junee

Junee is located about 18 km west of the proposal site, about 34 km west of Wagga Wagga and about 148 km east of Canberra. The town makes up 78% of the Junee LGA population and is the closest service centre for residents of Illabo and Bethungra.

The town provides services including a hospital, medical centre, correction centre, post office, rural fire service, police station, aged care, accommodation and, banks and shopping. Junee is also home to a variety of heritage tourist attractions such as the Railway Roundhouse and the Monte Cristo Historic Homestead.

3.2.3 Bethungra

Bethungra is about 11.3 km north east of the proposal site, about 59 km north east of Wagga Wagga and about 130 km north west of Canberra. The closest service centre for residents of Bethungra is Junee.

The town is well known for its tourist attractions including the Bethungra Rail Spiral which is the largest example of a 360 degree spiral in Australia and the Old School T-house made from the historic Bethungra Public School. Environmental attractions include the Ulandra Nature Reserve located about 8 km south of Bethungra and the Bethungra Dam which provides picnic and camping facilities.

3.2.4 Wagga Wagga

Wagga Wagga is located in the Wagga Wagga Local Government Area within the Riverina Region. It is considered a major regional city and services the town of Junee.

The regional city provides services including medical facilities, banks, shopping, indigenous services and aged and disability support. Primary, secondary and tertiary education facilities including Charles Sturt University are also available. Recreational areas of interest include a library, theatre, art gallery, museum and aquatic centre.

4 STAKEHOLDER GROUPS AND CONSULTATION STRATEGIES

It is important to identify key stakeholder groups and relevant characteristics of the groups to tailor engagement strategies to suit them. Different levels of engagement will be appropriate to different groups, depending on the potential interest or impacts on the groups:

- Where impacts are minor, the International Association for Public Participation (IAP2) consultation spectrum suggests approaches such as 'Inform' and 'Consult'.
- Greater impacts on communities require approaches such as 'Involve', 'Collaborate' and 'Empower'.

At this stage of the assessment, impacts are expected to be greatest for near neighbours and Illabo township, attenuating with distance. Substantive impacts are considered unlikely at Bethungra and Junee although local interest in the project is expected.

Proposed strategies are set out below for each stakeholder group. Levels of engagement may change, depending on issues identified during the consultation process.

Table 4-1 Stakeholder group consultation strategies

Stakeholder group	Defining Characteristics	Consultation strategies
Adjacent neighbours	Neighbours located directly next to the proposal site who may have a view of the infrastructure and be potentially impacted by noise and vibration during the construction phase or from haulage routes. Nine residents are located adjacent to the proposal site (including the solar array and connection infrastructure) including two involved landowner residences.	**Inform, consult and collaborate** Face to face consultation and direct feedback is required. Changes to the project or development of specific management plans may be required through mitigation strategies. All consultation should be documented.
Near neighbours	Neighbours with a view of infrastructure or those who may be potentially impacted by noise and vibration during the construction phase or from haulage routes. Nine residences are located within 2 km of the site (including two involved landowner residences) and have the potential to be impacted.	**Inform and consult** The opportunity for group presentations and seeking direct feedback should be provided upon request. Consultation should include provision of newsletters and media releases containing updates to project status. Changes to the project or development of specific management plans may be required through mitigation strategies. All consultation should be documented.
Community of Illabo	The large scale of this development has the potential to define the community in certain ways. The potential impacts may be of interest to residences. Given the historic nature of the area, the development may be of particular interest to the public. Additionally, this group is particularly relevant due to their exposure to gold exploration in the region. Illabo is located approximately 5.6 km north-west of the proposal site.	**Inform and consult** The opportunity for group presentations and seeking direct feedback should be provided upon request. Consultation should include provision of newsletters and media releases containing updates to project status. It is of high importance to understand the values and potential impacts of this group. It will assist the project assessment process, development of suitable mitigation strategies and in gaining social license to operate from the local community. All consultation should be documented.

Stakeholder group	Defining Characteristics	Consultation strategies
Local businesses	Local businesses in the towns of Junee, Illabo, Bethungra an Wagga Wagga whose services may be impacted by the influx of workers during construction. As for the community of Illabo, this development may be of particular interest to business owners in the area. Opportunities and potential impacts will need to be considered. Accommodation and services for project construction staff and other economic matters may be of interest in the town of Junee and Wagga Wagga. Local business can benefit the project by distributing information about the project and may play a large part in influencing community opinions.	**Inform and consult** The opportunity for direct feedback should be provided upon request. Consultation should include provision of newsletters and media releases containing updates to project status. It is of high importance to understand the values and potential impacts of this group. It will assist the project assessment process, development of suitable mitigation strategies. Potential opportunity to distribute project information to this group and understand community sentiment. All consultation should be documented.
Local employers	Illabo Public School. Eurongilly Public School Opportunities to engage students and staff may be of interest to Illabo Public School.	**Inform, consult and collaborate** Face to face consultation and direct feedback is required. Specific information may be obtained from this group to understand impacts of the project (e.g. haulage routes). Potential opportunity to distribute project information to this group and collaborate throughout the construction phase of the project. This group should be provided with a method to receive information and provide specific feedback or ask questions. Consultation regarding school transport should be undertaken during implementation of a Traffic Management Plan.
Representative bodies	Junee Shire Council Junee Business and Trades Wagga Wagga LALC (Local Aboriginal Land Council)	**Inform** Specific information may be required from this group. This group should be provided with a method to receive information and provide specific feedback or ask questions.

Stakeholder group	Defining Characteristics	Consultation strategies
Media	Medium to ensure delivery of a clear and consistent message to the broader community: • Local television • Local newspaper • Local radio	**Inform** May be used to reach the broader community. This group should be provided with a contact for provision of further information if required.
Special interest groups	Contact with special interest community groups may be beneficial. Local information can be important in assessing special areas of interest throughout the project assessment. Specific to this proposal, The Junee Community Power Inc was identified as a potential stakeholder.	**Inform** These should be individually contacted. Specific information or assessment may be required to understand and mitigate potential impacts for this group. This group should be provided with a means to give feedback or ask questions.
Broader community	Communities within 20 km of the proposal site who may be interested but not likely to be directly impacted by the project. Potential opportunities and impacts to the broader community are important to consider during the approval process.	**Inform** Newsletters, advertisements, media releases and website information should be used to relay information about the project. This group should be provided with a contact, for further information provision of feedback. Delivery of information to the broader community should provide a clear and consistent message throughout the approval process.

5 ISSUE MANAGEMENT

Issue	Risks	Strategies
The project may define / overwhelm the small locality / village of Illabo	This may polarise the community. They may not feel that the project reflects their values. The scale of the project may overwhelm the existing local character.	Early dissemination of information about the project and its specific justification and benefits, particularly with reference to developing new income streams on agricultural land and the ability to restore the land capability after decommissioning. This may include material about the role of solar energy in the country's energy mix, the technology and its impacts. Particularly, visualisations (representative montages) can assist to understand the actual versus perceived impacts. Seek direct input into how the project may reflect the communities 'personality' and values. How the benefits of the project may be spread to the local community. Clear communication of key environmental impacts and mitigation strategies of the project. Offer direct contact with project manager.
Misinformation / left out of engagement	Feel left out, disengaged, misinformed. Rural residences can be difficult to contact and word of mouth travels very fast in small communities.	Direct communication early to local community – adjacent landowners first, near neighbours second, then the wider community. Multiple means to identify all relevant residences undertaken – mapping, Council, mail out to a post code rather than individual addresses, engagement with other members of the community.
Lack of support for project	Lack of interest, leading to low levels of public support. Unaddressed concerns may generate opponents of this project. Large proportion of jobs in local area are reliant on agriculture (cattle and sheep farming), this may influence support of development of renewable infrastructure / conversion of agricultural land.	Early dissemination of information about the project and its justification and benefits. Clear communication of key environmental impacts and mitigation strategies. Make participation easy – to ensure all concerns are addressed. Be creative – seek support for renewable project that demonstrates how benefits are felt at the local level. Look for opportunities – e.g. ways the project could benefit local businesses and residents in construction and operation.

Issue	Risks	Strategies
The approvals process can be long and complex.	Perception that the process is too difficult to become involved in. Suspicion that input will not be valued. Overly technical information provided, use of jargon.	Clearly illustrate approvals process. Clearly define opportunities for community input including what is required and when it is required. Communicate back, identifying where input has been used. Reinforce this at each relevant stage for community input – pre lodgement, during public exhibition etc. Milestone events should be identified early and celebrated.
Distrust in environmental assessment process.	Distrust of impact identification and mitigation strategies.	Establish credentials of assessment team and proponent. Present these in the EIS and in newsletters etc. Make participation easy – create opportunities to discuss issues with the team.
Representative	Risk of biased consultation, serving only the 'squeaky wheel'. Sections of the community may be "overpowered" and may be marginalised.	Ensure community is engaged in a forum that minimises risk of debate being side tracked. Follow up with smaller groups where required. Use established social (and media) channels in dissemination of materials, e.g. sport clubs.
Unified message	Differing messages may create confusion and mistrust.	Limit points of contact. Have message clearly set out for use, rather than reinventing it for each consultation activity.
Unequal distribution of benefits	Residents close to the development are likely to feel more strongly.	Identification of stakeholder groups should reflect differences in impacts.

6 PROJECT BASED ACTIVITIES

The following table outlines the different project stages and associated community consultation objectives and activities, in chronological order. The stages include:

- Decision to proceed with early investigations, proposal development
- Receipt of EIS format and content requirements from DPE
- Detailed assessment and proposal development
- EIS on public exhibition, submissions reporting

Further stages apply post approval.

During this progression, mile stone events should be celebrated, and used as an opportunity to keep the community on board. Milestones can include:

1. Announce project – notify near residents first, follow up with consistent information
2. Receipt of Secretary's Environmental Assessment Requirements – notify stakeholders via media release
3. Early studies update – meet the community face to face
4. EIS submitted – explain avenues for input
5. Approval – celebrate in a way that involves the community

Further milestones apply post approval.

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Decision to proceed with early investigations, proposal development, and receipt of SEARs				
Adjacent landowners	Misinformation / left out of engagement Lack of support for project	Inform, consult, involve, collaborate	Early dissemination of information about solar development generally. Early dissemination of information about the project and its justification and benefits. Seek direct input to include in assessment approach and development of proposal.	Face to face meetings with Project Manager. Encourage ongoing direct contact with Project Manager.
Near neighbours and Illabo local community	Misinformation / left out of engagement May define locality Lack of support Unequal distribution of benefits	Inform and consult	Early dissemination of information about solar development generally. Early dissemination of information about the project and its justification and benefits. General feeling toward solar development	Open house event and newsletter introduction to the project, contact number provided and supplementary information on website. Provide avenue for direct feedback if requested.
Local business owners	Misinformation / left out of engagement Lack of support for project Impacts on services and accommodation	Inform and consult	Early dissemination of information about solar development generally. Early dissemination of information about the project and its justification and benefits. General feeling toward solar development	Open house event and newsletter introduction to the project, contact number provided and supplementary information on website. Provide avenue for direct feedback if requested.
Local employer	Impacts on Illabo Public School Opportunity for collaboration	Inform, consult, involve, collaborate	Ensure that the information is available to Illabo Public School. Discuss specific impacts and opportunities, e.g. opportunity to collaborate with school students and staff to provide education experience such as tree planting or adopt a tree program for potential screening.	Face to face meeting / direct contact with Project Manager. Encourage ongoing direct contact with Project Manager.

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Near neighbours and Illabo local community	Distrust in environmental assessment process The approvals process can be complex.	Inform	Preliminary project announcement, including stage of assessment, likely timelines, ways in which the community can be involved. Ensure the timelines and the stages for community input are clearly documented - use graphics and indicate where we are now at for the assessment.	Newsletter to include graphic showing stage of the process and opportunities for input Website, links to other projects / accreditations
Broader community	Distrust in environmental assessment process The approvals process can be complex.	Inform	Make information on the project team and assessment team available	Newsletter to include graphic showing stage of the process and opportunities for input
Detailed assessment and proposal development				
Adjacent landowners	Lack of support	Inform, consult, involve, collaborate	Discuss and understand specific impacts on these receivers. Feed information into the final assessment to ensure all their issues have been identified and addressed by the project.	Face to face meeting / Phone call
Near neighbours and Illabo local community	May define locality Lack of support	Inform, and consult	Update community on details and impacts of the project Outline ways they can continue to have input into the project Seek broad feedback on how the community feels about solar farms generally and this project specifically	Open house information day (provide links to relevant information, provision of feedback forms - also now on website)

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Near neighbours and Illabo local community	Distrust in environmental assessment process. Unequal distribution of benefits Risk of biased consultation, serving only the 'squeaky wheel'.	Inform and consult	Update community on detailed project, its impacts Seek input – any additional concerns, input into visual assessment if required. Meet specialists Feed information into the final assessment to ensure all community issues have been identified and addressed by the project, differentiating between stakeholder groups Consultation regarding school transport during implementation of a Traffic Management Plan.	Open house information day (provide links to relevant information, provision of feedback forms - also now on website)
Broader community	Representative	Inform and consult	Outline ways they can continue to have input into project Seek broad feedback on how the community feels about solar farms generally and this project specifically.	Media release, link to website (including feedback form)
EIS on public exhibition, submissions reporting				
Adjacent landowners	Relationship with landowners and community	Inform, consult, involve, collaborate	Update on project status.	Phone call update
Near neighbours and Illabo local community	Relationship with community	Inform and consult	Update on project status. Outline ways they can continue to have input into project	Newsletter update
Broader community	The approvals process can be long and complex.	Inform	Update on project status. Outline ways they can continue to have input into project	Media release
Approval determination				
Adjacent landowners	Relationship with landowners and community	Inform, consult, involve, collaborate	Update on project status.	Phone call update
Near neighbours and Illabo local community	Relationship with community	Inform	Update on project status. Thank the community for their involvement	Media release Website

7 MONITORING AND EVALUATION

To ensure this plan is effective during the implementation of activities, and adapts as required to new information, the following review actions will be undertaken alongside implementation activities:

- Appoint and maintain a consultation manager for the project to implement activities and review this plan regularly.
- Keep an accurate record of all feedback from consultation activities and all correspondence with the community.
- Monitor regularly and respond promptly to email and phone queries.
- Monitor if the activities reaching a diverse and representative section of the community; do new activities need to be implemented?
- Has relevant information been passed back to:
    - Those developing the detailed project description
    - Assessment staff.

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APPENDIX C COMMUNITY CONSULTATION NEWSLETTER

Illabo Solar Farm

Newsletter Edition

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June 2018

Project Snapshot

Installed Capacity – About 80MW

Solar Panels – Up to 290,000 solar photovoltaic (PV) panels and potential battery storage

Project Investment – Up to $150 million

Construction Period – About 12 months

Project Status – Lodgement of Planning and Environment Assessment (PEA) in the second half of this year

Environmental Benefits – Will provide enough clean energy to power 24,000 homes and save 130,000 tonnes of annual greenhouse gas emissions, equivalent to removing 28,000 cars from the road

Employment – More than 100 jobs during construction and up to two full-time positions during operation

Economic Benefits – Economic stimulus to Illabo, Bethungra and Junee during construction, with increased need for accommodation, retail and hospitality services

Project Description

The proposed Illabo Solar Farm is a large-scale solar farm that will generate up to 80MW of solar energy. The New South Wales site is six kilometres south-east of Illabo and 50 kilometres north-east of Wagga Wagga. The proposal area is located within the Junee Local Government Area (LGA) in the Riverina region, south of Allawah Road.

The solar energy farm will consist of up to 290,000 solar PV panels on an area of about 210 hectares and be capable of delivering up to 80 megawatts of renewable energy. The site is a generally flat, cleared property which is currently utilised as a dryland mixed farming operation. The proposed solar farm would utilise about 210 hectares of the 1000 plus hectare property. The site is located about 2.2 kilometres south of the existing Murrumburrah – Wagga North 132kV transmission line.

Access to the solar farm will be provided by a dedicated access track. This track will measure just over two kilometres and follow a similar route to the dedicated powerline connecting the site to the grid. The access track is likely to run south from Allawah Road, connecting to the northern section of the site.

An operations and maintenance facility will also be built on site, together with a hardstand and laydown area within the solar farm boundary. There will also be a small car parking area and the site will provide for battery storage (if considered viable).

Planning Process

Last year Tilt Renewables engaged NGH Environmental to conduct a flora and fauna survey of the proposed site to determine the ecological values of the project area. A Planning and Environment Assessment (PEA) process is underway and Tilt Renewables intend to lodge the PEA application in the second half of this year. The planning process is likely to run up to 12 months. Tilt Renewables has also commenced engagement with TransGrid, the network operator for the 132kV transmission line which runs adjacent to the proposed solar site.

Who is Tilt Renewables?

Tilt Renewables is a dual New Zealand and Australian listed owner, operator and developer of established wind farms and an extensive wind and solar development pipeline.

Originally part of New Zealand based company Trustpower, that had its beginnings in 1924 as a local power authority and has been active in Australia since 2001, Tilt Renewables was established in October 2016 as the result of the company demerger. Tilt Renewables has had a strong track record developing wind assets in Australia and New Zealand, developing and operating Australian projects across Queensland, New South Wales, Victoria, South Australia and Western Australia.

We have an existing asset base of 322 operating turbines across eight wind farms, with a total installed capacity of 582MW. This includes Snowtown Wind Farm, South Australia's largest and Australia's second largest wind farm, Salt Creek Wind Farm (which began operation in 2018) and Tararua Wind Farm, New Zealand's largest wind farm.

Our pipeline of development projects has the potential to produce more than 2000MW of additional renewable generation capacity.

Project Benefits

Clean Energy

The Illabo Solar Farm will generate up to 80MW of renewable energy - enough to power about 24,000 homes and offset 130,000 tonnes of CO2 produced by coal-fired electricity generation every year. That's the equivalent of removing about 28,000 cars from the roads.

Employment

Up to 100 people will be employed during the 12-month construction period, with one or two permanent full-time employees after construction.

Community Benefit Fund

Tilt Renewables has implemented a community benefit fund to benefit local educational, sporting and community groups at most of our operating projects. Tilt Renewables will look at establishing a similar scheme for this project once operational and we will engage with local community members closer to construction on an appropriate format and representative management committee.

Community Engagement and Consultation

A Community Consultation Plan (CCP) has been developed for the Illabo Solar Farm proposal to facilitate engagement with the community and allow meaningful contributions from locals into the environmental assessment and project development.

As part of this process we offer to meet face-to-face with immediate neighbours and interested parties to ensure the community understands the nature of the project and that we are able to consider and address any concerns.

We value the strong relationships we've shared with landowners and local community groups on all our projects and we would like to build on these relationships for the proposed Illabo Solar Farm.

Tilt Renewables will be engaging with members of the local community throughout 2018. If you would like to discuss this project with us, please reach out via the contact details provided below.

Contact us. Web: www.illabosolar.com.au
Email: illabosolar@tiltrenewables.com | **Phone**: 1300 660 623 **Postal Address:** PO Box 16080 Collins St West , Melbourne Vic 8007

tilt renewables