YASS SOLAR FARM

SCOPING REPORT

Premise

PREPARED FOR:

TETRIS ENERGY

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ENGINEERING ENVIRONMENT AGRICULTURE WATER

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1. SITE DETAILS

1.1 LOCATION AND REGIONAL CONTEXT

The proposed solar farm development site is located to the south-west of the town of Yass, on land adjacent to the Yass Transgrid Substation, within the Yass Valley Local Government Area (LGA). The development site is on Lot 5 DP1165198, Lot 1 DP999493 and Lot 7 DP15756 (with a development footprint of approximately 150 ha). Lots 5 and 7 are owned by a single landowner while Lot 1 is owned by Transgrid.

The development site is accessible via Perry Street to the north-east.

The site in a regional context is provided in **Figure 1** and the immediate site locality in **Figure 2**.

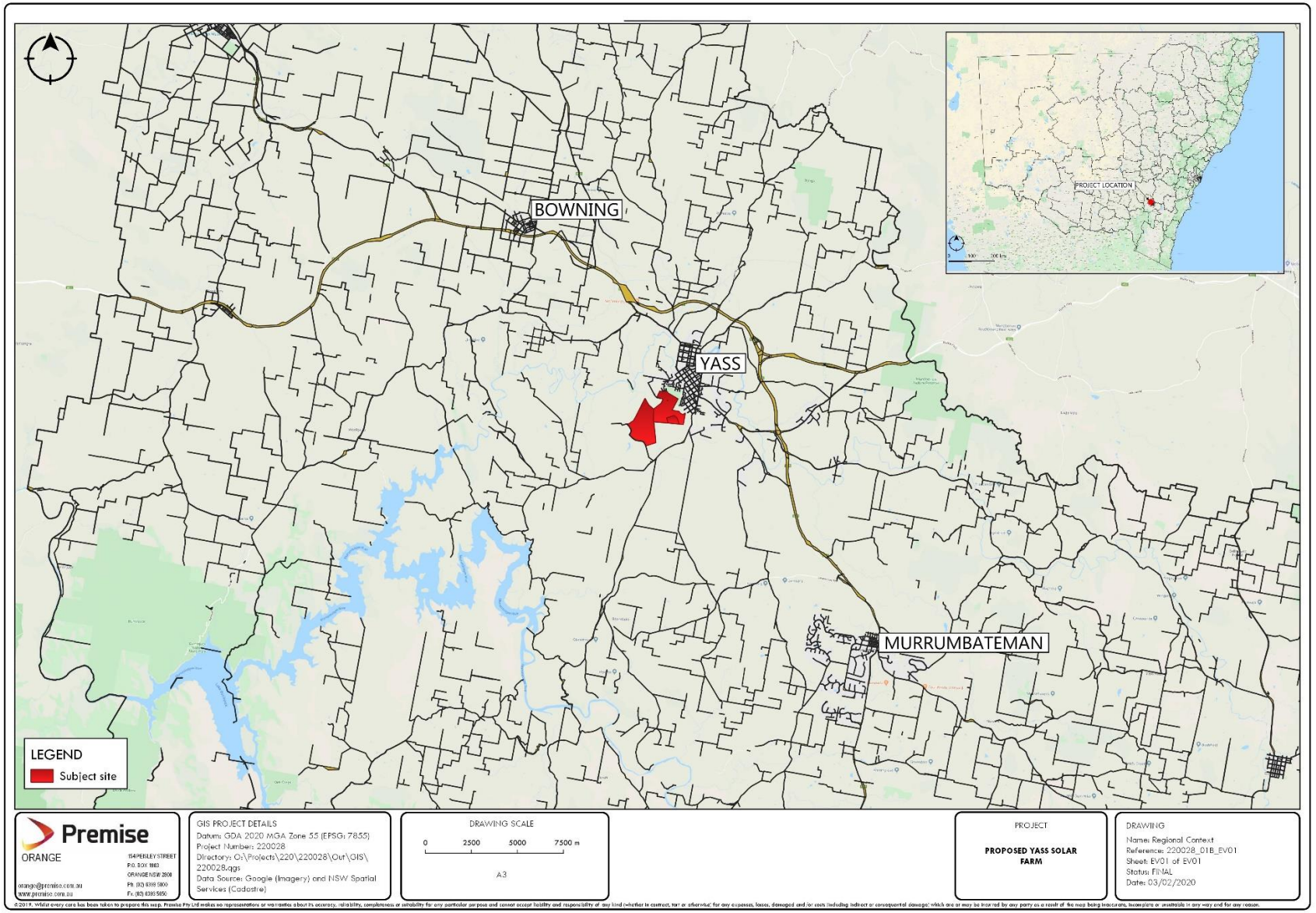

Figure 1: Site location regional context (Imagery: NSW Spatial Services / NearMap)

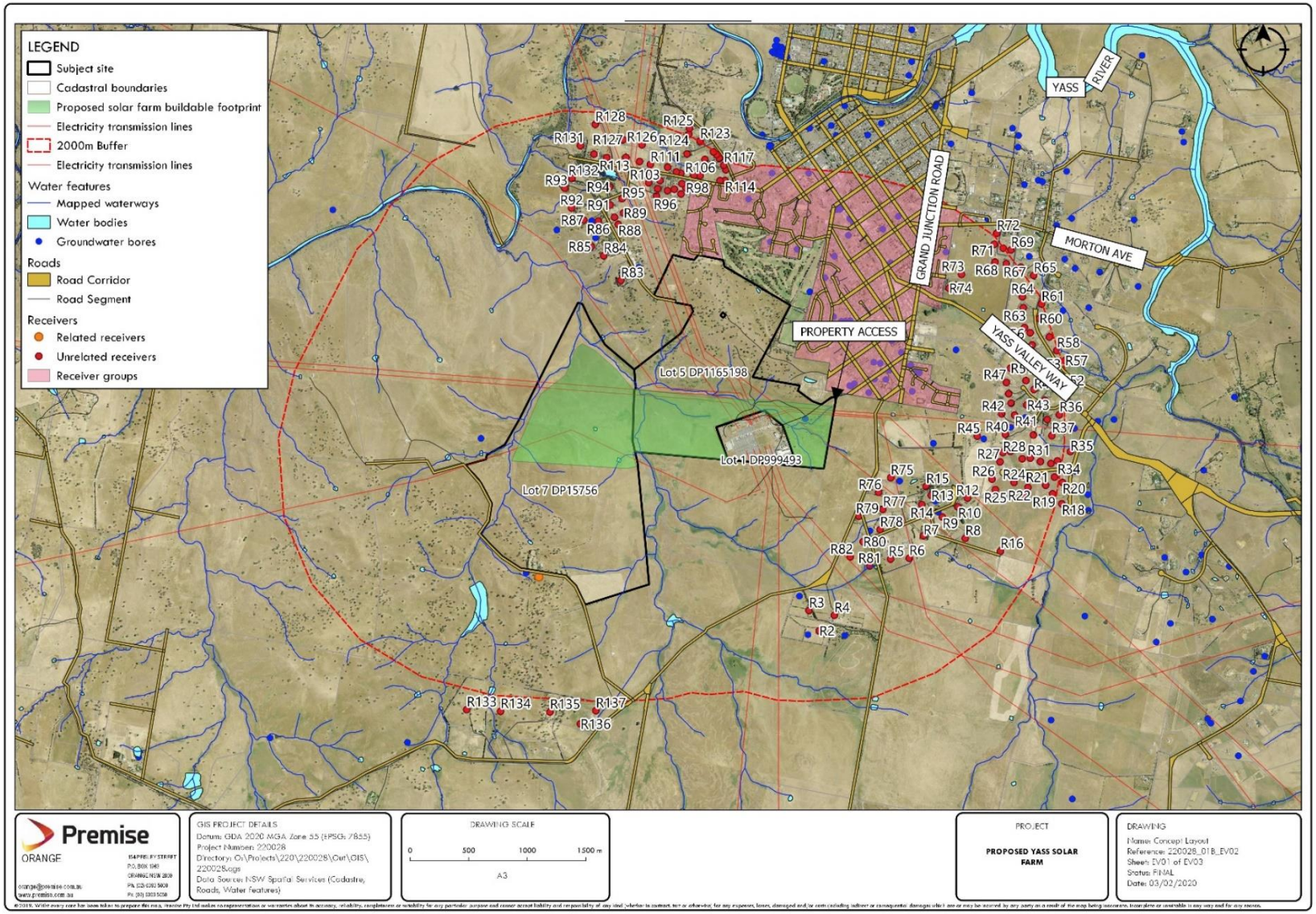

Figure 2: Development site (Imagery: NSW Spatial Services)

1.2 SURROUNDING DEVELOPMENT

1.2.1 LAND USE

The development site mostly consists of cleared land with some patches of vegetation and several isolated trees. The site is currently used for agricultural purposes, such as cropping and grazing. Buildings on the site are limited to infrastructure associated with the Transgrid substation.

A breakdown of land use within a 2 km radius is provided in **Table 1.1** and depicted in **Figure 3**.

Table 1.1 – Summary of land use within a 2 km radius of the site

Land Use	Area (ha)	%
Grazing modified pastures	2,002.7	60%
Grazing native vegetation	328.7	10%
Residential and farm infrastructure	19.1	1%
Rural residential with agriculture	126.5	4%
Rural residential without agriculture	250.6	8%
Urban residential	223.8	7%
Intensive animal production	17.9	1%
Saleyards/stockyards	5.2	0%
Biodiversity	1.6	0%
Strict nature reserves	4.2	0%
River	109.7	3%
Nature conservation	4.2	0%
Manufacturing and industrial	10.5	0%
Services	6.1	0%
Commercial services	24.1	1%
Public services	10.2	0%
Recreation and culture	85.5	3%
Electricity substations and transmission	26.8	1%
Transport and communication	0.3	0%
Waste treatment and disposal	11.8	0%
Roads	67.8	2%
Transport and communication	0.3	0%
Water extraction and transmission	0.3	0%

Source: NSW OEH GIS Dataset – NSW Land Use 2007

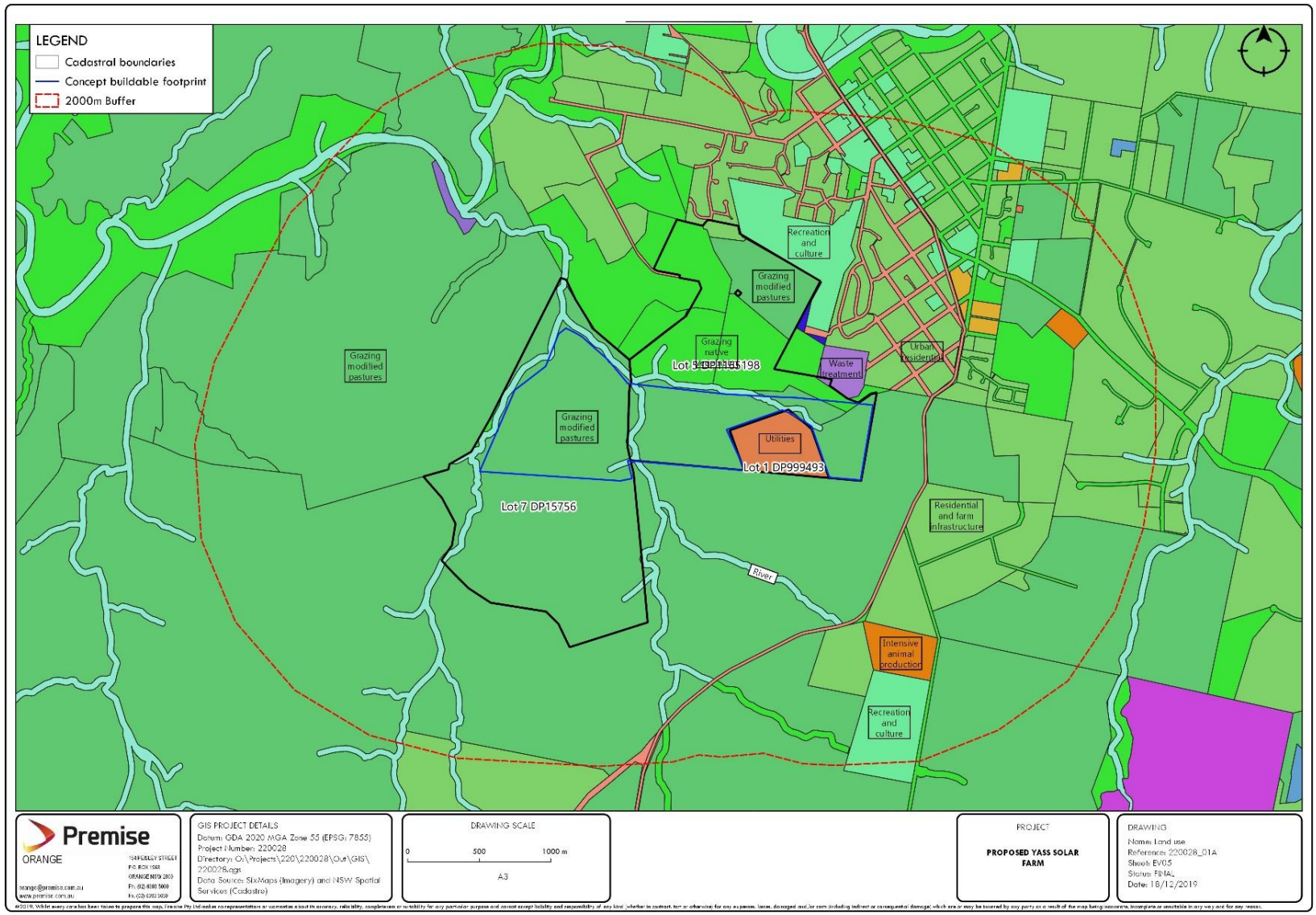

Figure 3: Land use within 5 km radius (Data: NSW OEH)

1.3 POTENTIALLY AFFECTED RECEPTORS

The proposed solar farm is located on land directly adjacent to the Transgrid Yass Zone substation and on land to the south-west of the township of Yass.

The topography of the land provides an excellent visual and aural separation between the proposed footprint and the suburban areas of Yass.

The closest receiver to the project, is a related received.

Approximately 136 individual unrelated receivers, are located within 2 km of the site, including many within the Yass township itself.

The EIS would provide a visual assessment of the potential impacts of the solar farm. Given the prevailing topography, this is expected to be limited.

1.4 KEY INFRASTRUCTURE

The development site is bisected by Perry Street.

A range of electricity transmission lines cross the site as shown in **Figure 2**, including 66 kV, 132 kV and 330 kV ETL's entering the substation from the north and south.

1.5 ENVIRONMENTAL FEATURES

1.5.1 TOPOGRAPHY

The site is undulating and is typically in use for grazing purposes. The site slopes towards the west to Booroo Ponds and Rainbow Creek.

1.5.2 VEGETATION

The approximately 150 ha development site mostly consists of cleared land with some patches of vegetation and several isolated trees. The site does not appear to contain extensive connective stands of remnant native vegetation.

It is noted that the development site is not within areas mapped as terrestrial biodiversity in the Yass Valley LEP and the site does not contain any mapped bushfire prone land.

1.5.3 WATER

1.5.3.1 Surface Water

There are two (2) small farm dams within the proposed development footprint, one to connected to mapped drainage lines and the other freestanding. First, second and third order drainage lines are mapped across the site and connect to a fourth order watercourse (Ridgey Creek) west of the development site.

Some watercourses are also mapped as Key Fish Habitat by the NSW Department of Primary Industries (Fisheries)

Surface water features at and surrounding the site are depicted in **Figure 2**.

1.5.3.2 Groundwater

A review of the online Water NSW *Real Time Data website* confirms that there is one (1) registered groundwater bore on the site. This has a drilled depth of 120 metres but no details on standing water level or water bearing zones.

On the western side of the ridge that separates the site from town, there is another three (3) bores near to the site. Details of these bores are provided in **Table 1.2**.

Groundwater features at and surrounding the site are depicted in **Figure 2**.

Table 1.2 – Groundwater bores in close proximity to the site

Site ID	Authorised Purpose	Drilled Depth	Standing Water Level	Water Bearing Zones
GW020883	Not known	24.4 m	9.8 m	24.40-24.40
GW066295	Stock, domestic	48.10 m	4.0 m	42.00-45.00 48.00-48.10
GW404784	Stock, domestic	70 m	Not known	60.00-64.00

Source: Water NSW https://realtimedata.waternsw.com.au/

Given the drill depths and depths to water bearing zones and the nature of the proposed works, it is unlikely that groundwater would be intersected by the proposed development.

1.5.3.3 Flooding

There is no Flood Prone Land mapped in the Yass Valley LGA. The EIS will consider flood risks.

2. DEVELOPMENT DESCRIPTION

2.1 SOLAR FARM

The YSF will use solar PV panels to convert sunlight into electrical current, with grid compliant energy then delivered to the TransGrid substation. Electricity will be sold into the National Electricity Market (NEM) and Large Generation Certificates (LGC's) will be sold to liable entities under the *Renewable Energy Act 2000*.

The proposed output capacity of the proposed solar farm is approximately 80 megawatts. The final capacity and footprint of the solar farm infrastructure will be refined through consideration of findings as a result of further site investigations and identification of constraints and opportunities mapped through the environmental impact assessment process. The intent, however, is to maximise the built footprint over the development site which, at this stage, includes an area of approximately 150 ha.

Solar PV technology will be either crystalline silicone or thin film. The solar PV modules will be connected together via a direct current (dc) collection system consisting of cables mounted on the module support structure. The support structure will be east-west tracking. A tracking system tracks the daily movement of the sun and a motorised system rotates the panels constantly towards the sun to maximise energy output performance.

Inverters and transformers will be located in an array within the footprint to convert the dc current to alternating current (ac). Inverter and transformer assemblies will be mounted on a steel platform or slab at ground level and generally covered. The ac collection system will consist of underground cabling at 22kV or 33kV to connect to each inverter assembly and deliver the electricity to the site substation. The

site substation will consist of a transformer to increase voltage to 132kV or 330kV. The site substation will be enclosed securely.

A connection from the site substation to TransGrid's substation will be made via overhead or underground high voltage cables.

Battery storage providing a capacity of approximately 20 megawatts would form part of the application but a decision on whether it would be installed would be made closer to the point of construction and commissioning, given the uncertainty around the cost of battery delivery. Storage would provide the capacity to deliver electricity to the transmission network on demand and more closely follow demand fluctuations. This will ensure the electricity is most valuable to the market. If battery storage is included at the development site battery banks will be housed in containers or a shed. The structures will provide shelter and security and will incorporate services to control temperature etc. Concrete footings are likely to be laid to support the structures. The storage facility would be located near the site substation and will be connected via underground or overhead cables.

A control room with associated parking area will be located on the site. This will be a relatively small structure which will provide amenities for a limited number of site staff as well as facilities to enable monitoring of the performance of the solar farm and communications connections to the electricity market operator. Once operational the solar farm will require minimal site based maintenance. It will be monitored remotely and only attended to rectify faults and for occasional scheduled maintenance.

Construction is estimated to take up to 18 months. The site is expected to require minimal preparation in advance of installing the PV panel system as it is flat with minor undulations and largely devoid of vegetation. A security fence will be installed on the site boundary and construction tracks will be laid down. Construction will require the use of bull dozers, water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks, water tankers, cranes, and aerial lifts. Deliveries of modules and other equipment will be made via flatbed trucks on the approved route and site entrance.

2.2 GRID CONNECTION

The transmission line that will connect YSF to TransGrid's substation would be owned by the operator of the YSF.

The Infrastructure SEPP makes development for the purpose of an electricity transmission or distribution network permissible without consent when carried out by or on behalf of an electricity supply authority or a public authority. Such development may be assessed under Part 5 of the EP&A Act. Alternatively, transmission or distribution infrastructure may be considered a component of the project and assessed as a permitted activity via the Part 4 SSD process.

The subject land is zoned a combination of SP2 – Infrastructure (Electricity Generating Works) and E4 – Environmental Living.

Electricity generating works is defined as:

> *electricity generating works means a building or place used for the purpose of making or generating electricity.*

The proposed ETL is permissible as an ancillary component of an electricity generating works, which is permitted with consent on the SP2 land.

The environmental impacts of transmission or distribution lines required for YSF (a solar SSD project) will be considered in the assessment of the application for the development.

Consistent with DPE's *Large Scale Solar Energy Guideline* (December 2018), Tetris Energy will provide information in the Environmental Impact Statement about the necessary transmission lines, including the proposed location, timing of decision-making, interaction with the timelines of the solar energy project and relevant stakeholders, to assist in the consideration of all aspects of the project.

3. PERMISSIBILITY AND STRATEGIC PLANNING

3.1 STRATEGIC PLANNING DOCUMENTS

3.1.1 NSW 2021 PLAN & RENEWABLE ENERGY ACTION PLAN

The NSW 2021 plan, released in 2011, sets state-wide priorities for action and also guides resource allocation. Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states:

> *We will contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources. Specific initiatives include:*
>
> - *Building the Moree solar power plant in partnership with the Commonwealth Government under the Solar Flagship Program*
> - *Establishing a Joint Industry Government Taskforce to develop a Renewable Energy Action Plan for NSW to identify opportunities for investment in renewable energy sources.*

Since release of the 2021 plan, the NSW Government has overseen the development of the NSW Renewable Energy Action Plan (REAP). The vision of the plan is a '*secure, affordable and clean future for NSW*. Goal 1 of the REAP is to attract renewable energy investment, including to *'support mid-scale solar PV to enable an uptake of solar technologies where they are most cost effective'*.

The proposed YSF sits comfortably with this state led objective and is consistent with the goal and intent of the REAP.

3.1.2 SOUTH EAST AND TABLELANDS REGIONAL PLAN 2036

The *South East and Tablelands Regional Plan 2036* is the NSW Government's strategy for guiding land use planning decisions for the South East and Tablelands Region for the next 20 years. At its heart is a core vision for the region supported by four supporting goals:

Vision: *A borderless region in Australia's most geographically diverse natural environment with the nation's capital at its heart.*

Goals:

- *A connected and prosperous economy*
- *A diverse environment interconnected by biodiversity corridors*
- *Healthy and connected communities*
- *Environmentally sustainable housing choices.*

These goals are in turn supported by a range of local directions that provide context and detail to the overarching goals.

Of particular relevance to the development of this project are the following directions, discussed in the context of the project in **Table 3.1**.

Table 3.1 – Riverina Murray Regional Plan

Direction	Assessment
6: Position the region as a hub of renewable energy excellence	The project is directly consistent with this direction through the delivery of a renewable energy resource
8: Protect important agricultural land	The project does not affect zoned primary production land.
13: Manage the ongoing use of mineral resources	Avoid developing on land of strategic importance for mineral exploration/extraction
14: Protect important environmental assets	Impacts to environmental assets would be adequately assessed within the EIS
17: Mitigate and adapt to climate change	The subject site is not mapped as affected by hazard, including bushfire or flooding.
23: Protect the region's heritage	Appropriate assessment and review of potential impacts to heritage would be addressed within the EIS
26: Coordinate infrastructure and water supply in a cross-border setting	Provision of infrastructure to benefit the region would be a key outcome of the project

On the basis of the above, it is concluded that the project is generally consistent with the vision of the Regional Plan.

3.1.3 YASS VALLEY SETTLEMENT STRATEGY 2017-2036

A solar farm contributes to some of Yass Valley Shire Council's broader goals around land use for the region. Specifically, a solar farm development would meet an identified objective of the *Yass Valley Settlement Strategy* (2017):

> *It is also recommended that the Yass Valley area investigate renewable energy production (solar and wind) opportunities which could supply the ACT Renewable Energy target.*

3.1.4 THE TABLELANDS REGIONAL COMMUNITY STRATEGIC PLAN 2016-2036

The *Tablelands Regional Community Strategic Plan 2016-2036* (CSP) identifies the community's main priorities and aspirations for the future. It contains the vision for The Tablelands region (Yass Valley, Upper Lachlan, Goulburn Mulwaree and Canberra regions) being:

> *To build and maintain sustainable communities while retaining the region's natural beauty.*

The vision is supported by a range of strategic priorities and pillars, being:

1. Our Environment: We appreciate our range of rural landscapes and habitats, and act as custodians of the natural environment for future generations.
2. Our Economy: We have a strong regional economy experiencing sustainable growth, which provides for a diverse range of employment opportunities.
3. Our Community: We are a network of vibrant, inclusive and diverse communities that value our cooperative spirit, self-sufficiency, and rural lifestyle.
4. **Our Infrastructure: Our community is well serviced and connected to built, social and communications infrastructure.**
5. Our Civil Leadership: Our leaders operate ethically and implement good governance. We empower our residents with the tools to participate actively in the development of our communities.

The proposed YSF would assist in achieving the key strategic priorities and pillars highlighted above by diversifying Yass Valley's economic base and infrastructure by providing a new industry, and investment in renewable energy to reduce climate change.

3.2 ENVIRONMENTAL PLANNING INSTRUMENTS

3.2.1 NSW LEGISLATION

3.2.1.1 Environmental Planning and Assessment Act 1979

The proposed YSF would be assessed under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

3.2.1.2 State Environmental Planning Policy

State Environmental Planning Policy (State and Regional Development) 2011

Clause 8 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) provides that development is declared to be State Significant Development (SSD) for the purposes of the EP&A Act if:

> *1. The development is not permissible without consent under Part 4 of the EP&A Act; and*
>
> *2. The development is specified in Schedule 1 or 2 of the SRD SEPP.*

Clause 20 of Schedule 1 of the SRD SEPP provides:

> *"Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, bio-fuel, distillate and waste and hydro, wave, solar or wind power), being development 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 proposed development is not located in an environmentally sensitive area of State Significance, but does have a capital investment value in excess of $30 million – refer **Section 7**.

Accordingly, the proposed solar development is declared to be SSD for the purposes of the EP&A Act.

State Environmental Planning Policy (Infrastructure) 2007

By virtue of Clause 34 of Division 4 of Part 3 of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) the development of electricity generating works are permitted on prescribed rural, industrial or special use zone. An electricity generating works is defined by the standard instrument as:

> *electricity generating works means a building or place used for the purpose of making or generating electricity.*

The SP2 zone is a prescribed zone and the project entails the carrying out of electricity generating works; therefore development in relation to this portion of the site is permitted with consent via clause 34 of the ISEPP. Development within the SP2 zone would consist of electrical infrastructure to convert the energy and connect the solar infrastructure with the Transgrid infrastructure and the state grid.

The portion of the development located E4 land is not within a prescribed rural, industrial or special use zone, however, by virtue of Section 4.38(3) of the EP&A Act, development consent may be granted despite the development being partly prohibited by an environmental planning instrument. As the development is partly prohibited, by reference to the commentary above in relation to the SP2 zone, the

development on the E4 zoned portion of the site may be permitted pursuant to clause 4.38(3). Other land uses proposed as component of the application including extensive agriculture, for the purposes of fuel management within the site once the farm is operational. Extensive agriculture is permitted with consent in the E4 zone.

Additionally, solar energy systems are permitted with consent by clause 34(7) of the ISEPP on any land by any person. A solar energy system is defined by the ISEPP as:

> *solar energy system means any of the following systems:*
>
> *(a) a photovoltaic electricity generating system,*
>
> *(b) a solar hot water system,*
>
> *(c) a solar air heating system.*

The proposal entails a solar farm utilising photovoltaic technology to generate electricity. The ISEPP does not contain a definition of a 'system', therefore it is necessary to consider the ordinary definition of the term. A number of dictionaries (including the Macquarie) agree that a system (noun) is defined as:

> *an assemblage or combination of things or parts forming a complex or unitary whole:*

It is considered that the proposed large scale solar farm is a 'system' within the ordinary definition of the word. The solar farm proposes the generation of electricity via photovoltaic panels. It is therefore considered that the development satisfies the definition of a solar energy system and is therefore permissible with consent on any land.

By reference to Schedule 3 or the ISEPP, the development is not a traffic generating development and therefore does not require referral to Roads and Maritime Services.

State Environmental Planning Policy No 55 – Remediation of Land

A review of the NSW EPA Contaminated Land Record and List of NSW contaminated sites notified to the EPA confirms there are no known contaminated sites at or near the site.

Based on the historical agricultural use of the site, it is unlikely that significant contamination exists at the site. Assessment of contamination risk will be undertaken as part of the EIS.

Construction and operation of the proposal is unlikely to pose a significant contamination risk. A CEMP would address management of contamination if identified during construction.

State Environmental Planning Policy No. 44 – Koala Habitat Protection

State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44) applies to the Yass LGA, and therefore an assessment of core koala habitat at the site is required. This would be addressed by an appropriate ecological assessment sufficient to satisfy the requirements of the Biodiversity Conservation Act 2016.

3.2.1.3 Yass Valley Local Environmental Plan 2012

The site is located within the Yass Valley LGA and is therefore subject to the provisions of the *Yass Valley Local Environmental Plan 2012* (LEP). The site is located on land zoned a mixtures of SP2 – Infrastructure (Electricity Generating Works) and E4 -Environmental Living.

The objectives of the SP2 – Infrastructure zone are:

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*

The objectives of the E4 – Environmental Living zone are:

- *To provide for low-impact residential development in areas with special ecological, scientific or aesthetic values.*
- *To ensure that residential development does not have an adverse effect on those values.*
- *To ensure that development is provided with an adequate water supply and the disposal of effluent.*

The proposed YSF would impact on the availability of land for low-impact residential development during the life of the project. The project involves minimal ground disturbance and is reversible, allowing the development of the land for low-impact residential development land use in the future.

As outlined the proposal entails the carrying out of development characterised as electricity generating works. This is permitted with consent in the SP2 zone via the LEP but prohibited in the E4 zone. By reference to Section 4.38 of the EP&A Act, development consent for state significant development may be permitted that is partly prohibited.

It is also considered that the development can also be characterised as a solar energy system by reference to the definition within the ISEPP and is therefore permitted with consent pursuant to clause 34(7) of the ISEPP.

3.2.1.4 Roads Act 1993

The development would utilise the existing local road connecting to a local road, Perry Street. Therefore, consent from Roads and Maritime Services is not required under section 138 of the *Roads Act 1993*.

3.2.1.5 Biodiversity Conservation Act 2016

The potential impacts to threatened species listed under the *Biodiversity Conservation Act 2016* will be considered in the EIS.

3.2.1.6 National Parks and Wildlife Act 1974

The potential impacts to Aboriginal heritage pursuant to the *National Parks and Wildlife Act 1974* will be considered in the EIS.

3.2.1.7 Heritage Act 1977

There are no known items of heritage significance at or near the site.

3.2.1.8 Water Management Act 2000

The development may require a controlled activity approval under s. 91 of the *Water Management Act 2000* (WM Act) if development is to be located on waterfront land, as defined in the WM Act. This will be addressed in the EIS.

Pursuant to Section 89J(1)(g) an activity approval required under the WM Act, other than an aquifer interference approval, is not required for SSD. Aquifer interference is not anticipated in relation to this site.

3.2.1.9 Fisheries Management Act 1994

The development site does contain watercourses mapped as key fish habitat (refer – **Section 1.5.3**). If dredging or reclamation works are required or fish passage will be blocked in key fish habitat, a permit under the *Fisheries Management Act 1994* will be required. This will be addressed in the EIS.

3.2.2 COMMONWEALTH LEGISLATION

3.2.2.1 Environment Protection and Biodiversity Conservation Act 1999

A search of the online Protected Matters Search Tool (PMST) did not identify matters of national environmental significance or other matters protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as likely to occur at or near the area.

3.2.2.2 Native Title Act 1993

A review of National Native Title Tribunal's Native Title Register did not identify any Native Title claims or applications, or Indigenous Land Use Agreements at or near the site.

4. IMPACT IDENTIFICATION AND ASSESSMENT

4.1 PRELIMINARY RISK ASSESSMENT

A preliminary risk assessment based on a desk-top review of available data, an initial site inspection, and review of SEARs issued by the Department for other solar farms, have all been considered to identify potential impacts associated with the development.

It is noted, however, that these impacts are identified and prioritised on the basis of preliminary research alone and their significance (or otherwise) will ultimately be determined following completion of further specialist studies, investigation and assessment.

4.2 KEY ISSUES

4.2.1 CUMULATIVE IMPACT

The nearest known state significant solar development to the subject site is located at Sutton, approximately 35 kilometres to the south-east of the subject site. There are no other known solar developments proposed or approved in close proximity to the subject site. As such, the likelihood of significant cumulative impacts from solar developments is not anticipated.

At a state significant level, wind farms have been the more common form of renewable energy projects proposed in the Yass Valley LGA, including the following developments:

- Conroy's Gap Wind Farm - located approximately 17 kilometres west of Yass;
- Yass Valley Wind Farm - located approximately 20 – 35 kilometres west of Yass;
- Rye Park Wind Farm - located approximately 35 kilometres north of Yass; and
- Bango Wind Farm - located approximately 20 kilometres north of Yass.

Given the significant separation distance between the various projects and the subject site, significant cumulative impacts are not anticipated.

4.2.2 BIODIVERSITY

The development will involve clearing of native vegetation, primarily limited to ground cover. Whilst the extent of the proposed clearing has yet to be determined, there are known occurrences of Endangered Ecological Communities in the locality and existing records of threatened species sightings near the site (as recorded in the NSW Atlas of Wildlife). There is also the potential for species and ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* to occur

at or near the site, notwithstanding that a search of the site using the Department of Environment's online Protected Matters Search Tool (PMST) did not reveal any matters of significance.

A search of the Bionet Atlas of NSW Wildlife within a 2 km radius of solar farm site identified four threatened fauna species (three birds and one lizard) and no threatened fauna species.

A review of the Bureau of Meteorology (BOM) National Atlas of Groundwater Dependent Ecosystems (GDE) confirms that there are GDEs (surface or subsurface dependent) within the development site. These matters would be addressed via the ecological assessment in the EIS.

4.2.3 ABORIGINAL HERITAGE

A basic search of the online Aboriginal Heritage Information Management System (AHIMS) within a 50 metre radius of the development lots identified 12 Aboriginal sites or places.

An Aboriginal Archaeological and Cultural Heritage Report was prepared for the host site (encompassing an area of 884.3 hectares) in relation to a proposal to subdivide the land for large lot residential purposes. This report, prepared by Kayandel in 2010, identified six (6) Aboriginally significant artefact scatters within the footprint of the proposed solar development.

Potential impacts of the proposal may include disturbance of unknown Aboriginal heritage sites. It is proposed that as part of the EIS a specialist Aboriginal Heritage Assessment would be undertaken to identify potential impacts, and necessary management and mitigation measures.

4.2.4 VISUAL AMENITY

The site is located beyond a ridge line to the south of the town of Yass, in a generally visually protected location. The visual catchment of the subject site is low, with limited residential receivers in close proximity to the site and with a view of the site.

Elevation data from Geoscience Australia's Elevation Information System (ELVIS) confirms that the vast majority of residential receptors within a 2 km radius of the development site are shielded from direct views of the solar development by the prevailing topography. Stands of vegetation restrict views towards the site for some receptors. However, views may be possible from neighbouring properties without intervening topography or vegetation. Visual impact has the potential to be a key issue for local landowners and residents.

Potential impacts to surrounding sensitive receptors may include changes to existing rural views and solar glint and glare from the solar panels. It is proposed that as part of the EIS a Visual Impact Assessment would be undertaken to identify potential impacts, and necessary management and mitigation measures.

4.2.5 CONSTRUCTION NOISE

Noise impacts would mostly be associated with construction activities and include noise generated by preparatory earthworks, delivery and assembly of the solar panel infrastructure, grid connection, and operation of vehicles.

Operational noise impacts may include the operation of a solar tracking system (optional feature to be confirmed), transformer station and switchgear, and maintenance works. Operational noise impacts are expected to be negligible. It is proposed that as part of the EIS a specialist Construction and Operational Noise and Vibration Assessment would be undertaken to identify potential impacts, and necessary management and mitigation measures.

4.2.6 OTHER ENVIRONMENTAL ISSUES

Other environmental issues that they considered less likely to affect the project are identified in **Table 4.1**. These issues are considered to be manageable due to the availability of appropriate management and mitigation measures.

Table 4.1 – Assessment of Other Environmental Issues

Issue	Potential Impacts	Strategies
Access and traffic	Potential impacts (increased traffic volumes) during construction for Perry Street	• Consultation with Roads and Maritime Services and Yass Valley Shire Council. • Traffic impacts would be assessed in the EIS. • Management of traffic impacts would be addressed in a Construction Environmental Management Plan (CEMP).
Air quality	Potential impacts during construction may result from dust generation and vehicle emissions.	• Air quality impacts would be assessed in the EIS. • Management of air quality impacts would be addressed in a CEMP.
Bushfire risk	The site is not located on or near land mapped as bushfire prone land and lacks significant woodland vegetation. The closest bushfire prone land is mapped approximately 650 metres km north-west of the site. There are no patches of woodland vegetation on site connective with larger patches of woodland in the surrounding locality. Therefore, it is considered unlikely that the site would pose a significant bushfire risk.	• Potential bushfire risk and appropriate management/mitigation measures would be addressed in the EIS. • Bushfire risk management would be addressed in a CEMP.
EMF hazard and risk	Impacts from an electromagnetic field (EMF) may be generated by transmission lines and underground cables. EMF risks are expected to be below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines (adopted by the Australian Radiation Protection and Nuclear Safety Agency, ARPANSA).	Potential EMF hazards and risks will be assessed in the EIS, including calculation of EMF levels associated with proposed infrastructure.
Groundwater	Impacts to groundwater are considered unlikely due to the depth of groundwater bearing zones.	The existing groundwater environment and potential impacts would be addressed in the EIS.
Land use	The development would result in a change in land use from environmental living to electricity generation (noting there are currently no dwellings within the immediate vicinity of the land within the E4 zone land.	Impacts to land use will be assessed in the EIS.

Table 4.1 – Assessment of Other Environmental Issues

Issue	Potential Impacts	Strategies
Loss of resources	The site is zoned for environmental purposes, despite the current prevailing use being for primary production purposes (reflecting the former use of the site prior to the rezoning for E4 and SP2 via the 2012 LEP). This representation of activities that commenced as permitted without consent operations prior to the coming into effect of the 2012 LEP. The approval of the use of the land for the purposes of a solar farm including extensive agriculture supports the ongoing agricultural use of the land. The soil capability is classes 4 (moderate) and 6 Low). The land is low capability and has been rezoned for environmental purposes. The proposal also has the potential to affect exploration and future mining of potential mineral resources. The site is not currently impacted by any mining titles or exploration licences.	• Impacts to existing land resources would be assessed in the EIS.
Social and economic	Construction is expected to generate positive economic impacts by creating employment opportunities. Increased employment opportunities may attract more people to Yass, increasing pressure on accommodation and services.	Impacts to the social and economic environment would be assessed in the EIS.
Soils and water	Potential impacts to soils and surface water may occur during construction, such as erosion and sedimentation. Impacts are expected to be minimal and manageable.	• Impacts to soil and water would be assessed in the EIS. • Management of soil and water impacts would be addressed in a CEMP.
Geology	The site is not mapped as being likely to contain naturally occurring asbestos.	Geotechnical investigations will be completed and reported in the EIS.
Historic Heritage	A search of the NSW Planning Portal (Heritage), inclusive of items listed under the Yass Valley LEP, the NSW Office of Environment and Heritage State Heritage Register and Department of the Environment Australian Heritage Database indicates that there are no known heritage items at or near the site.	Impacts to historic heritage would be assessed in the EIS.
Waste management	Potential impacts may include generation of waste during construction. Operation of the project is not expected to generate waste.	• Potential wastes generated by the proposal would be addressed in the EIS. • Waste management would be addressed in a CEMP.

5. JUSTIFICATION

5.1 DEVELOPMENT SUITABILITY

Benefits from this project will contribute to the Yass region, the state and the nation.

YSF will particularly benefit the Yass region given it provides a good solar resource, suitable land use and good network connection opportunities. Yass is a growing regional centre with a number of growth prospects. New clean energy generation will be an ideal complement to these growth prospects and contribute to the sustainability of the town.

Local economic benefits include employment, particularly during construction, together with the provision of services and components and training of local contractors. The project will introduce new capabilities to the region which will benefit later projects. Local companies will be able to win project work around the country as the solar industry grows. The project benefits the state because it ensures that renewable energy which is consumed in NSW is also generated here. Without local renewable generation projects in NSW, NSW electricity consumers will have to import renewable generation from projects in other states.

The project will generate significant clean energy which will contribute to the Federal government's 33,000 GWh Renewable Energy Target for 2020. The energy generated will also avoid transmission losses from centrally located fossil fuel generators. The annual carbon emissions avoided through generation of clean energy will be significant. Solar projects are a relatively new development in Australia despite being well established in overseas markets. YSF will contribute to reducing the cost of large scale solar in Australia by adding to the experience base of the local supply chain.

5.2 SITE SUITABILITY

Tetris Energy identified the YSF site during a thorough screening program to identify suitable large scale solar sites in New South Wales. The site was selected after a number of alternatives were discarded due to sub-optimal performance against screening criteria. The proposed site has a strong high voltage transmission network with significant available capacity to connect. The solar resource is good. The land is zoned a mix of SP2 and E4. Within the E4 zone, electricity generation works are permissible with consent. The works on the E4 portion of the landscape are permissible via Section 4.38(3) of the EP&A Act.

The development site is largely devoid of significant biodiversity constraints and the portion proposed via development would not require significant civil works required to prepare for construction. Further, whilst the land is currently used for farming and grazing the site is not located on or near any Biophysical Strategical Agricultural Land (BSAL). The site landowner is interested and has committed to supporting the project. The site has good overall fundamental parameters that will generate electricity at a competitive rate.

5.3 JUSTIFICATION FOR PREFERRED DESIGN

The proposed site is ideally suited for a solar PV facility. Its proximity to the nearby transmission network minimises the connection infrastructure required and minimises the associated cost burden. The nearby transmission network has been assessed to have spare capacity to accept the connection. The solar resource at this location is comparatively high due to the generally hot and dry environmental conditions. Therefore, the facility will be highly efficient and operate at a high capacity factor. The site terrain is ideally suited as it is relatively flat and almost completely devoid of native vegetation. Therefore,

very little site preparation will be required prior to installing the facility. There is minimal flooding risk. Site access is also excellent from the adjacent local roads.

6. CONSULTATION

6.1 SITE SELECTION CONSULTATION

In identifying the subject site as being suitable for the proposal, Tetris Energy has engaged in extensive consultation with local land owners, Yass Valley Shire Council, Transgrid and the Department Planning, Industry and Environment. The opportunities and areas of risk have been explored with stakeholders during these consultations.

6.2 SCOPING STAGE CONSULTATION

Targeted consultation has commenced and Tetris Energy has commenced engagement with landowners around the site and with Yass Valley Shire Council.

In addition, letters are to be sent to each landowner within 2 km of the site outlining the following:

- provided an introduction to Tetris Energy;
- informed them of the YSF proposal and provided a location map in relation to their property;
- extended an open offer to meet with them;
- explained why the YSF site was being considered;
- clarified that before a final decision to proceed could be made Tetris Energy would need to obtain a number of approvals;
- affirmed that community engagement is important to Tetris Energy and make a commitment to provide accurate and up to date information about the project and the approval processes involved;
- advise that as a neighbour, Tetris Energy is keen to hear their thoughts, draw on local knowledge and answer any questions they may have about the solar farm; and
- provided contact details for Tetris Energy and an invitation to be contacted at any time to discuss the status of the project.

A presentation to Yass Valley Council garnered in-principle support for the project given the proximity to existing infrastructure and the topographical separations to the town of Yass.

6.3 EIS CONSULTATION

Consultation will be undertaken in accordance with the following guidelines:

- *Large-Scale Solar Energy Guideline for State Significant Development* (DP&E, 2018).
- *Community and Stakeholder Engagement Draft Environmental Impact Assessment Guidance Series* (DP&E, 2017)
- *Community Consultative Committee Guidelines State Significant Projects* (DP&E, 2019) – if a Community Consultative Committee is required.

Yass Valley Shire Council

Yass Valley Shire Council will continue to be informed of the proposal and further face to face meetings will be scheduled with the planning officers and elected officials.

Neighbours

Neighbours will continue to be consulted through information posted directly and face to face meetings as requested to inform them of project details and progress and to obtain their input. This will continue through the development approval process and construction.

Community

The community will be informed of the project through notices in the local newspaper and through Yass Valley Shire Council. Consultation will be considered depending on the amount of local interest for an information day. Contact numbers and an email address will be provided for people who wish for more details.

Special Interest Groups

Special interest groups will be informed of the project to the extent they are affected by the project. The process of identifying affected groups has not commenced. As the development progresses and the construction schedule becomes clearer, local businesses will be advised via notices and media and will be invited to provide proposals for construction equipment, goods and services.

State and Federal Government

State and Federal government authorities will be informed of the project to the extent they are affected. The NSW Department of Industry and Regional Development Australia will be advised to ensure any opportunities to coordinate with the proposed infrastructure developments in Yass are captured. Elected representatives, State and federal elected members and the relevant ministers for Energy, Environment and Regional Development will be advised of the project as it progresses to ensure it is recognised for its contribution to state and federal clean energy development targets.

Other

Consultation will also be undertaken with the following stakeholders:

- Members of the local Aboriginal community;
- Organisations representing local, regional, State, national and international interests regarding business, community, indigenous and environmental issues; and
- Affected utility providers.

6.4 POST-APPROVAL CONSULTATION

If approved, the following consultation would be undertaken:

- Ongoing consultation with affected landholders and the community to manage issues regarding construction noise and disturbance; and
- Comply with any requirements to publish performance results.

7. CAPITAL INVESTMENT VALUE

Table 7.1 provides a preliminary breakdown of the capital cost of the project.

The overall cost of equipment and construction will be approximately $110 million assuming the final capacity is 80.0 MWac plus an optional battery storage system.

Table 7.1 –Capital Cost (Preliminary Estimate)

Project Components	$ (million)
Solar PV module equipment including installation	33
Mounting structure equipment including installation	18
Inverters and LV transformer equipment including installation	16
Civil works including piling, foundations, tracks, site entrance, fencing, compound, control room, site preparation	20
Electrical and communications cabling and equipment including installation and commissioning	23
TOTAL	**110**

8. REFERENCES

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