COUNCIL ASSESSMENT REPORT

WESTERN REGIONAL PLANNING PANEL

PANEL REFERENCE & DA NUMBER	PPSWES-88 – DA10-2021
LGA	Murrumbidgee
PROPOSAL	Construction and use of a 5MW micro solar farm and associated infrastructure
ADDRESS	Lot 135 DP750903 1207 Donald Ross Drive, Coleambally
APPLICANT/OWNER	Applicant: Greentech Solar Project No 1 Pty Ltd Owner: Mr PG and Mrs MC Wythes
DA LODGEMENT DATE	28 May 2021
REGIONALLY SIGNIFICANT CRITERIA	Clause 5 Schedule 7 of the SRD SEPP: Private infrastructure for the purpose of electricity generating works with a capital investment value of more than $5 million.
CIV	$6,458,943 million (excluding GST)
CLAUSE 4.6 REQUESTS	N/A
KEY SEPP/LEP	State Environmental Planning Policy (State And Regional Development) 2011 & Murrumbidgee Local Environmental Plan 2013
TOTAL & UNIQUE SUBMISSIONS KEY ISSUES IN SUBMISSIONS	Three (3) public submissions, one being an objection, Key issues: a) The condition and capacity of Cockys Lane b) The adverse environmental impacts on neighbours particularly air quality impacts c) The hazards and risks associated with fire and bush fire d) The loss of productive agricultural land
DOCUMENTS SUBMITTED FOR CONSIDERATION	Development Plan set prepared by ACEnergy Statement of Environmental Effects and Bushfire Assessment and Bushfire Emergency Management and Operations Plan prepared by MJM Consulting Engineers Construction Management Plan draft prepared by ACLE Services Flora and Fauna Assessment prepared by Kleinfelder Landscaping Plans Traffic Impact Assessment Report v1& v2 prepared by Traffic Works Social Impact Statement v5 prepared by Mara Consulting Test Report Photovoltaic Cells Battery Test Report Sungrow Gas Fire Extinguishing System Information Sheet
SPECIAL INFRASTRUCTURE CONTRIBUTIONS (S7.24)	N/A
RECOMMENDATION	Approval
SCHEDULED MEETING DATE	5 October 2021
PREPARED BY	Kelly Tyson, Manager Planning and Development Murrumbidgee Council
REPORT DATE	24 September 2021

Summary of s4.15 matters

Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report?

Yes

Legislative clauses requiring consent authority satisfaction

Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed, and relevant recommendations summarized, in the Executive

Summary of the assessment report?

Yes

Clause 4.6 Exceptions to development standards

If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment
report?

N/A

Special Infrastructure Contributions

Does the DA require Special Infrastructure Contributions conditions (S7.24)?

No

Conditions

Have draft conditions been provided to the applicant for comment?

Yes

EXECUTIVE SUMMARY

The Proposal

The development involves the construction and operation of a micro solar farm with an export capacity to the grid of 5 Megawatts (MW).

It includes:

- Installation of 16,128 solar panels each 450 watt and mounted on a single axis tracking system
- A central power station (13m long x 3m wide x 3m) high consisting of an inverter, transformers and switch gear
- HV switchboard and platform (5m long x 5m wide x 4m high)
- 5 x 40ft battery energy storage containers
- Power poles, overhead lines and underground electrical cabling
- Portable office and amenities including a 22,500L rainwater tank and 20,000L static fire fighting tank.
- Hard stand vehicle parking and laydown area
- 1.8m high perimeter security fencing with two rows of external landscaping and a 1m high stock [proof fence perimeter
- New access

A copy of the submitted plans is **ATTACHED**, refer to **Schedule 2.**

The Setting

Locality	Coleambally Irrigation Area (CIA). 25km north east of Coleambally and 23km south east of Darlington Point within the Murrumbidgee Council area
Development site	North-eastern part of Lot 135 DP 750903 Cockys Lane, Coleambally
Existing Land Use	Dry land cropping and grazing
Development Footprint	16.1 Ha (18.12 Ha originally proposed)
Setting	Irrigation farms Scattered farm houses and farm buildings Supply, drainage channels and irrigation bridges Two large solar farms, poultry sheds, substation and rural fire shed in the vicinity
Environment	Prior stream landscape, reactive soils and sandy rises Flat site gradating to the north west with rises to the south west Various Plant Community Types (PCTs) nearby

Permissibility

The principle planning controls for the development are Murrumbidgee Local Environmental Plan 2013 (LEP) and the Riverina – Murray Regional Plan 2036 (RMRP).

The proposed micro solar farm is defined as an "electricity generating works" under the Local Environmental Plan 2013.

"Electricity generating works means *a building or place used for the purpose of—*
a) making or generating electricity, or
b) electricity storage."

The land where the development is proposed is zoned RU1 Primary Production. Although, under the Local Environmental Plan 2013 an "electricity generating works" is prohibited in the zone it is permissible in the prescribed rural zone with development consent of the Western Region Joint Regional Planning Panel (WRJPP) under Clause 34 of the Infrastructure State Environmental Planning Policy (ISEPP).

Issues and Recommendations from s4.15 Assessment

Key issues

From this assessment the key issues of concern that are presented by the development include:

a) The condition and capacity of Cockys Lane
b) The adverse environmental impacts on neighbours particularly air quality impacts
c) The hazards and risks associated with fire and bush fire
d) The loss of productive agricultural land

These issues are considered to be resolved because:

a) The environmental impacts will be mitigated to minimise impacts to neighbours and the environment;
b) The surface condition of Cockys Lane will be improved to adequately cater for the development and ultimately rehabilitated to not less than its current condition at the end of the development life;
c) The technology proposed is considered safe and commensurate with other similar solar farm and battery storage developments and the development will comply with the RFS Planning for Bush Fire Protection
d) The development will be decommissioned and the site rehabilitated so it can be used for future agricultural production.

Key recommendations

1. Preparation and Implementation of a Construction Management Plan and an Operational Environmental Management Plan with provisions to manage:
   a) Access , traffic and road condition
   b) Stormwater drainage, erosion and sediment control
   c) Air quality impacts
   d) Weeds, pasture and stock
   e) Natural and man-made hazards and risks
   f) Waste and Recycling
   g) Worker Facilities

h) Essential Services
i) Emergency management
j) Neighbour consultation and complaints management

2. Prior to the issue of a Construction Certificate, preparation of a Decommission Plan that demonstrates how the site will be decommissioned and rehabilitated at the end of life for continued agricultural production. This is to include a suitable rapid appraisal method to allow the quantitative assessment of site condition and that can be used to measure rehabilitation success.

Assessment Conclusion

The proposed development is compatible with the character of the area, will have appropriate mitigation measures in place to minimise environmental impacts and offers a range of social, environmental and economic benefits to the local and wider community.

Recommendation

That the Development Application DA No 10-2021(Panel Ref. PPSWES-88) for a 5 Mega Watt solar farm and associated infrastructure at Lot 135 DP 750903 1207 Donald Ross Drive, Coleambally be APPROVED pursuant to Section 4.16(1)(a) of the *Environmental Planning and Assessment Act 1979* subject to the draft conditions of consent attached to this report in Schedule A.

1. THE SITE AND LOCALITY

1.1 The Site

The development, having a footprint of 16.1 Ha is proposed to be established at the north eastern part of Lot 135 DP750903 1207 Donald Ross Drive, Coleambally. The lot forms part of Farm 120 and is located in the Coleambally Irrigation area (CIA) about midway between Coleambally and Darlington Point in the Murrumbidgee local government area.

Lot 135 is irregular in shape and has an area of approximately 241 Ha. It is directly accessible from Cockys Lane with access also achievable from Donald Ross Drive via an adjacent portion that is part of the same land holding. The land has not been used for irrigation for many years although contour banks have been previously formed and remain visible at the south western part of the farm.

At its highest point Lot 135 has an elevation of 133m AHD grading down to an elevation of 126m AHD which is the landform elevation representative over the proposed development site.

The site is laid out for dry land cropping with sheep wool production, cattle fattening and associated grazing carried out. The allotment rises in the south west and various plant community types (PCTs) exist including some that are associated with endangered ecological communities (EECs) including the Sandhill Pine Woodland. Two older derelict houses are located on the treed sandhills as well as a more recent dwelling that is currently vacant but is suitable for habitation.

There are several farm access gates and a post and wire fence along the Cockys Lane frontage. Overhead power lines run north - south along the Lane and further north there is a 330kV Transgrid transmission line traversing generally east - west that is adjacent to and north of O' Neil Road.

1.2 The Locality

The Coleambally Irrigation Area (CIA) is an intensively irrigated agricultural landscape spanning 400,000 ha and served by the Coleambally Irrigation Corporation Ltd. (CICL)

The Irrigation Scheme was established in the 1950s and is founded on rice production but given the higher value return per ML used, more recently cotton and other high value horticultural crops have been planted including nuts..

It is a rural locality characterised by irrigation farms and infrastructure that includes water supply and drainage channels and irrigation bridges over roads. The Boona supply channel cuts across Cockys Lane south of the development site and the Tubbo channel is further north adjacent to and just south of O'Neils Road. Cockys Lane is a narrow dirt and gravel road and these two bridges are constrained due to width and restricted loading capacity.

Rural dwellings, farm sheds and farm buildings are scattered about the locality. A number of chicken growing complexes have been established in the vicinity, notably along Donald Ross Drive, some of which are yet to be fully developed. The expansive Darlington Point and Coleambally solar farms are located 2km and 8km away and there is a Rural Fire Service (RFS) shed located 2.2km south at the Cockys Lane & Wallace Road intersection. The closest neighbouring dwelling to the development site is 750m south is associated with the neighbouring Farm 2 and is occupied.

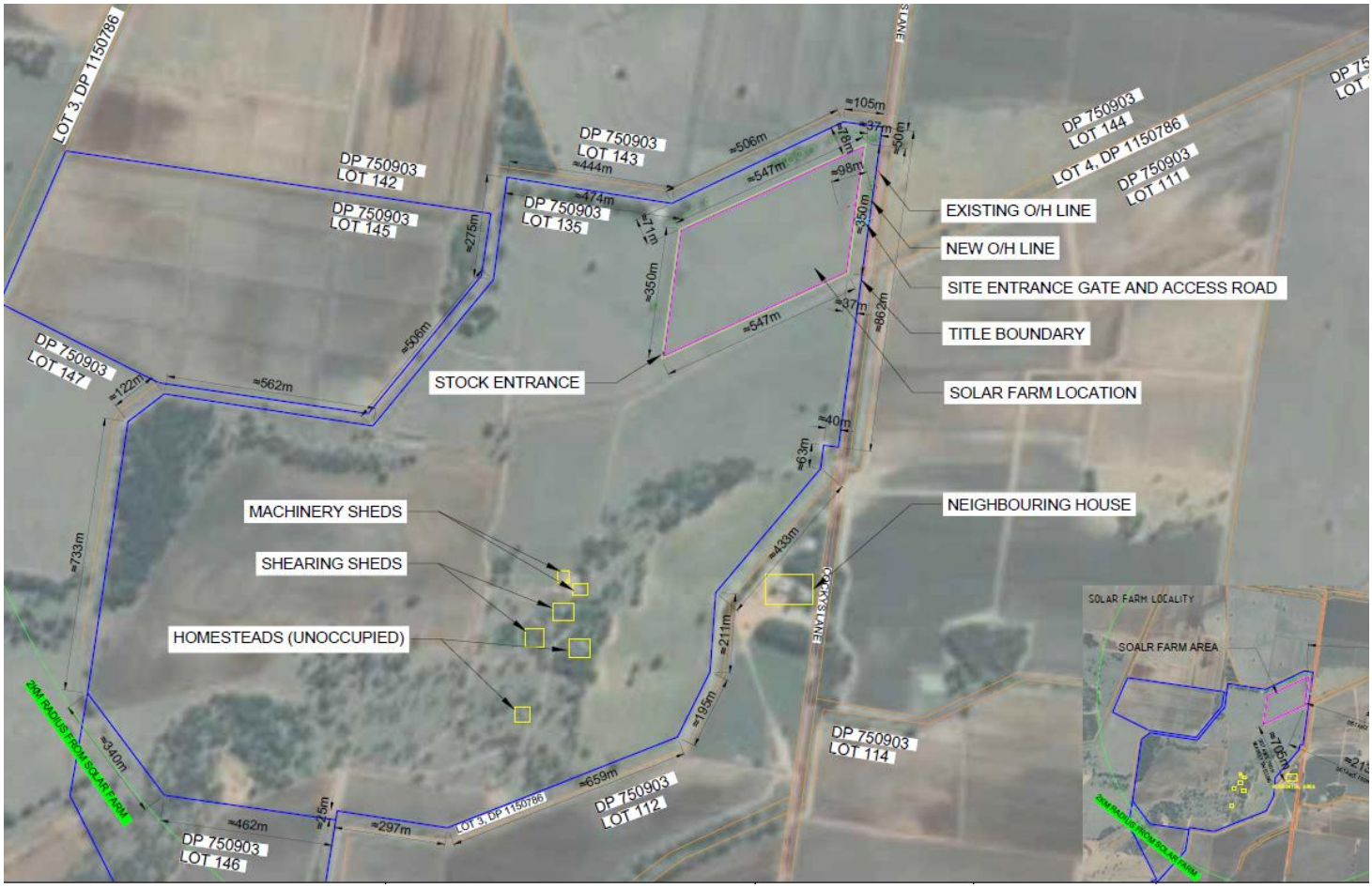

Figure 1. Site plan

2. THE PROPOSAL AND BACKGROUND

2.1 The Proposal

The development involves the construction and operation of a micro solar farm with a maximum export capacity to the grid of 5 MW.

The development has a predicted lifespan of 31 years and a footprint of 16.1 Ha. It includes

- The installation of 16,128 solar panels, each 450 watt and mounted on a single axis tracking system
- Prefabricated central power station (13m long x 3m wide x 3m high) consisting of an inverter, transformers and switch gear
- Five 40ft battery energy storage containers (BESS)
- High Voltage switchboard on a roofed platform (5m long x 5m wide x 4m high)
- Temporary site office and amenities, 22,500L rainwater tank and 20,000L dedicated fire fighting water tank
- New all-weather property access, lay down and vehicle parking area
- Power poles, overhead lines and underground electrical cabling
- 1.8m high chain wire perimeter fence with 8m entrance gate and stock gate
- 2 rows of native vegetation with a maximum height of 3m and spread of 5m planted outside of the perimeter fence and contained by a 1m high post and wire stock proof fence with a stock gate at the south western perimeter

The development is for electricity generating infrastructure by a private company with a capital investment value (CIV) of $6,458,943 million. It is a type of development referred to in Part 5 of Schedule 7 of State Environmental Planning Policy (State and Regional Development) 2011 and declared to be regionally significant. Consequently, the Development Application is required to be determined by the Western Regional Planning Panel (WRPP).

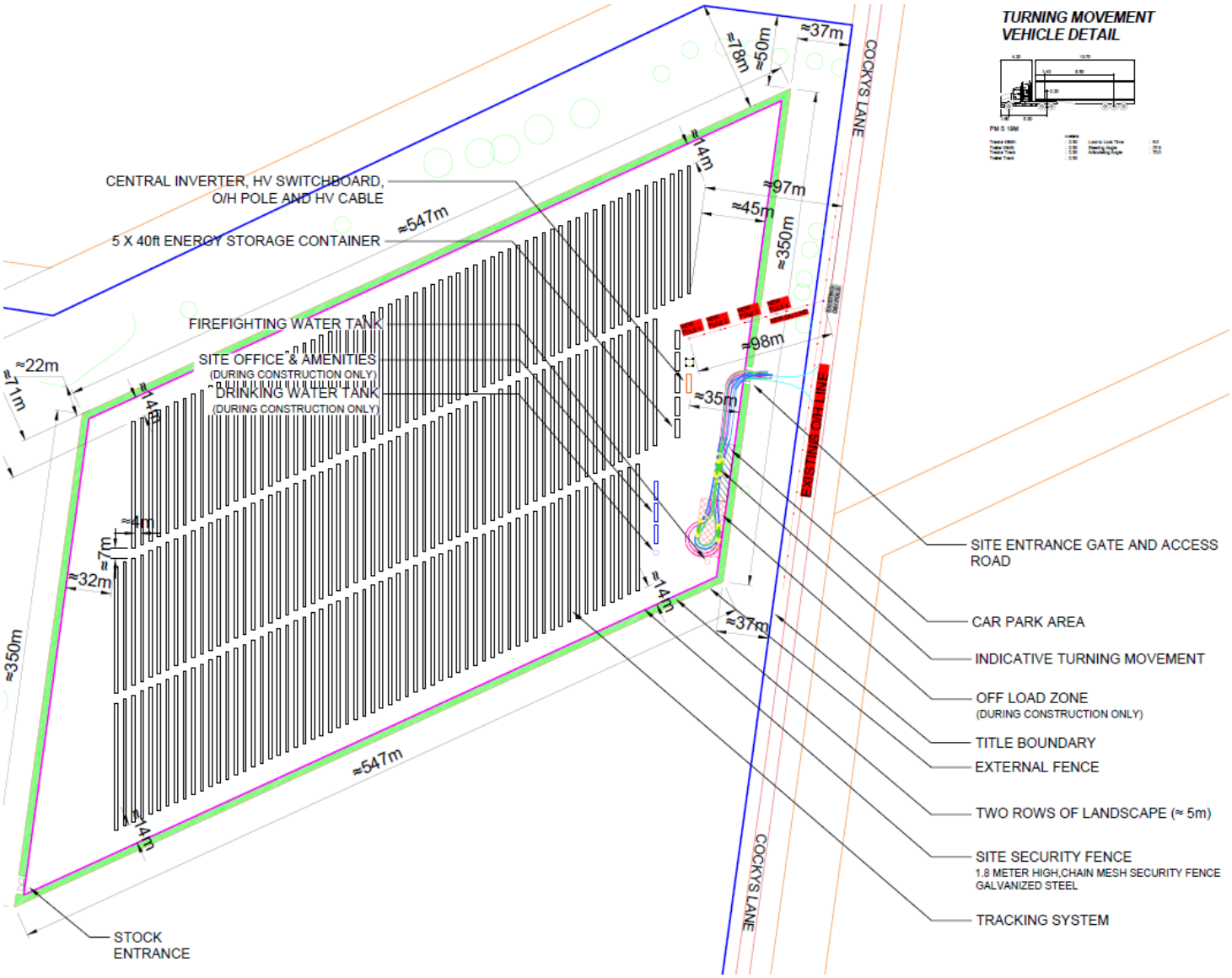

Figure 2. Proposed solar array & site layout

Development Snapshot

Footprint	16.1 Ha
Setbacks to perimeter boundary	East 37m to landscaping 90m to power panel / arrays North 78m to landscaping West 32m to arrays South 14m arrays to fence
Solar panels	16,128 non reflective each 2100mm x 1050mm x 40mm

Arrays	80-90 panels mounted on each. Central axis 1.4m above EGL Max aerial height 2.5m
Buildings/temporary structures	Office and amenities (Class 5) Switchboard platform (Class 10a/8) Solar panels and fences (Class 10b)
Other infrastructure	Central Inverter BESS containers, Underground and above ground cabling, Power poles
Essential services	Generator, property access, 22,500L potable water tank and 20,000L fire fighting tank, temporary toilets
Construction period	6 months Month 1 Site levelling/compaction if required (up to 16 hectares). Installation of security chain mesh fence and swing entrance gates Construction of road and crossing for access track, carpark, unloading area & site access Landscaping – plant as per the design drawings Drainage and stormwater installation as per the design Months 2-4 Delivery of long lead materials, PV Panels Install single-axis trackers for PV solar panels Installation of all PV solar panels Installation of an inverter station container Installation of the DC battery containers Installation of all required cable and cable tray 4-5 Months Installation of an HV switchgear Kiosk, testing and Commissioning
Daily no. of construction workers	50
ADTM (in and out)	Heavy Vehicles 6 Light vehicles 20
Predicted life	31 years
Tenure	Lease

2.2 Background

A pre-lodgement audio visual meeting was held prior to the lodgement of the application on 29 March 2021 where various issues were discussed including the matters for consideration within a Statement of Environmental Effects (SEE).

A summary of the key issues raised and how they have been addressed by the applicant is shown below in TABLE 1.

TABLE 1

Environmental Impacts	Statement of Environmental Effects
Other Supporting Documents	
Traffic	Traffic Impact Assessment (v1) & (v2)
Aboriginal Heritage	Due Diligence Assessment
Hazard and Risk	Bushfire Assessment and Emergency Operations Plan, Sungrow Gas Fire Extinguishing System, Test Report
Landscaping	Landscaping Screening Plan and Landscape Screening Plant Schedule & Sections
Cumulative impacts of solar farm on productive agriculture and community-	Social Impact Assessment v5 and Cumulative Impact Assessment
Biodiversity	Flora and Fauna Assessment
Construction and Operational impacts	Construction Management Plan

The Chronology of events associated with the Development Application is shown below in TABLE 2.

TABLE 2

Date (2021)	Event
29 March	Pre lodgement audio visual meeting
28 May	DA lodged
31 May - 30 June	Exhibition of the application
31 May	DA referred to external agencies
13 July	Panel site meeting and preliminary briefing
9 July	Formal referral of agency and public submissions to applicant
20 July	Request for information from Council to applicant
17 August	Applicant response to submissions
17 August	Amended plans lodged: G-1.0_0001205_FA-C_SITE PLAN G-2.0_0001205_FA-D_LOCATION DIAGRAM G5.0_0001205_FA-B_SECURITY FENCE DETAILS (See clarification below)
8 September	Confirmation of neighbours acceptance of developers mitigation measures
15 September	Further information provided - S88B restrictions and statement of commitments
20 & 21 September	Section 4.55 request for amendment of development application to clarify the amended plans uploaded on the 17 August. Changes include: Reduction of the footprint from 18 ha to 16.1 ha

	More compact PV layout to avoid the internal drain to the south Landscaping moved outside perimeter fence and changes in species with reduced spread Location of facilities (office, tanks) included
23 September	Conditions provided to applicant
24 September	Applicants acceptance of conditions

3. STATUTORY CONSIDERATIONS

Section 4.15(1) of the *Environmental Planning and Assessment Act 1979* ('EP&A Act') outlines the matters which the consent authority must take into consideration when determining a development application. These matters as are of relevance to the development application include the following:

(a) the provisions of any environmental planning instrument, proposed instrument, development control plan, planning agreement and the regulations
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.

These matters are further considered below.

It is noted that the proposal is not designated development and there are no concurrence authorities. The proposal was referred to the Natural Resource Access Regulator (NRAR) to ensure the proposal was not integrated and required a Controlled Activity Approval (CAA).

3.1 Section 4.15(1)(a)(i) - Provisions of Environmental Planning Instruments

The following *Local Environmental Plan (LEP), State Environmental Planning Policies (SEPPS)* and plans are relevant to this application:

- *State Environmental Planning Policy No. 55 – Remediation of Land;*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy (Primary Production and Rural Development) 2019*
- *Riverina Murray Regional Plan 2036*
- *Murrumbidgee Local Environmental Plan 2013*
- *Murrumbidgee Council Local Strategic Planning Statement*

A summary of the key matters for consideration arising from the SEPPS are outlined in **TABLE 3** and considered in more detail below.

TABLE 3

Summary of Applicable State Environmental Planning Policies

EPI	Matters for Consideration	Comply (Y/N)
SRD SEPP	Clause 20(1) declares the proposal as regionally significant development pursuant to Clause 5 of Schedule 7.	Y
Infrastructure SEPP	Clause 34(7) enables development for the purpose of a solar farm to be carried out in the prescribed rural zone with development approval of the consent authority Clause 45 (Determination of development applications — other development) – electricity transmission - the proposal is satisfactory subject to conditions. Clause 104 – The proposal is not Traffic-generating development and referral to TfNSW is not required**.**	Y
SEPP 55	Clause 7 Contamination and remediation has been considered in the Statement of Environmental Effects and the proposal is satisfactory	Y
PPRD SEPP	Protects agricultural land and provides for long term production, prevents land fragmentation	Y

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 ('SRD SEPP') applies to the proposal as it identifies if development is regionally significant development. In this case, pursuant to Clause 20(1) of SRD SEPP, the proposal is a regionally significant development as it satisfies the criteria in Clause 5(a) of Schedule 7 of the SRD SEPP as the proposal is development for private infrastructure comprising electricity generating works with a CIV over $5 million. Accordingly, the Western Region Planning Panel is the consent authority for the application.

The proposal is consistent with this Policy.

State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) SEPP* (ISEPP) aims to facilitate the provision of essential infrastructure and associated works through a consistent planning regime and improved flexibility. It identifies the type of environmental assessment category for different types of infrastructure and services and requires referral to relevant agencies or consultation with them prior to the assessment of certain development applications or prior to development commencing.

Part 3, Division 4 Clause 34 (1) of the Policy enables development for the purpose of an electricity generating works to be carried out with development consent in a prescribed rural zone. Accordingly, the proposed solar farm (which is a photovoltaic electricity generating system) is permissible with development approval.

Part 3 Division 5, Clause 45 of the Policy requires consultation with Essential Energy as the proposal may impact electricity transmission or distribution. Given the type of the development and the proposed works, the electricity supply authority, Essential Energy, were notified and provided with an opportunity to comment on the proposal.

The proposed development is not located on or close to a classified road nor does it meet or exceed the thresholds identified in the Column of the Table to Schedule 3 and therefore referral to the RMS was not required under Part 3 Division 17 Subdivision 1.

State Environmental Planning Policy (Exempt and complying Development Codes) 2008)

State Environmental Planning Policy (Exempt and complying Development Codes) 2008) (Exempt Development Code) applies to part of the development proposal.

Division 3, Subdivision 1 provides that the construction or installation of a building site shed, office or associated amenities structure is exempt development. One of the requirements for exempt development is that buildings must still comply with the Building Code of Australia (BCA). A temporary office and amenities buildings are proposed to be installed and used during the construction period and they must comply with the BCA. For example the office building must be accessible.

The Exempt Development Code prescribes certain development standards that must be met for proposed temporary structures i.e. wastewater must be appropriately disposed of, the structures cannot be used for residential purposes and they must be removed immediately upon completion of construction. Another general requirement to be satisfied is that stormwater must be discharged so that drainage does not affect existing drainage flows nor affect other property or result in sediment loss. Structures must be erected on land that has an appropriate bearing capacity that is firm and level to sustain the structure. They must also be installed or founded so that they able to withstand critical loads and forces that they may be exposed to as per the requirements of *AS1170.* It is important that the installation and founding of these structures be designed and certified by a professional engineer.

An appropriate condition has been included within the recommended conditions of consent (Schedule 1).

State Environmental Planning Policy No. 55 – Remediation of Land

The provisions of *State Environmental Planning Policy 55 - Remediation of Land* ('SEPP 55') have been considered in the assessment of the development application. Clause 7(1) of SEPP 55 requires consent authorities to consider whether the land is contaminated, and if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out. This matter was considered in the *Statement of Environmental Effects* (SEE).

Agriculture is identified as an activity that may potentially cause contamination under Table 1 of the Managing Land Contamination Guidelines.

The site has historically been used for irrigated cropping and grazing and herbicides and pesticides are likely to have been applied to the land. However given that the proposed development is a solar farm and not a residential land use, a land contamination assessment and potential remediation of the land is unnecessary as there are no accrued public health risks associated with the development of a solar farm. It is also relevant that Coleambally Irrigation as a scheduled activity, do undertake water quality monitoring of the channel system to ensure that degradation of land and water resources do not occur through irrigated farming activities or are mitigated and managed.

The SEE report identified no obvious physical signs of contamination and concluded that the land was suitable in its current state to support the development.

A search of the NSW 'POEO Public Register' undertaken on 26 July 2021 identified that there were no recorded contaminated sites within or near the proposed development site.

A site inspection of the development area carried out on 12 July 2021 found no evidence of the following:

- Intensive animal handling facilities;
- Scums or discoloured waterbodies;
- Chemical storage facilities;
- Evidence of land-based waste disposal or dumping; and
- Evidence of land disturbance, filling or excavation.

The proposal is considered to be consistent with SEPP 55.

State Environmental Planning Policy (Primary Production and Rural Development) 2019

The *State Environmental Planning Policy (Primary Production and Rural Development)* 2019 (PPRD SEPP) aims to facilitate the orderly and economic use of rural land for continued agricultural production as well as prevent land fragmentation and reduce the potential for land use conflict.

The footprint of the solar farm is 16.1 ha and this area is proposed to be enclosed with a perimeter fence and leased. The development site will not be subdivided and the land therefore not permanently fragmented so as to potentially exclude it or increase the likelihood of it being alienated for productive agriculture into the future.

Although the development footprint does comprise both Class 3 and Class 6 land, exotic weeds are proposed to be managed through the grazing of sheep which is currently being conducted on the land. The solar farm will facilitate the conservation of natural resources, promote sustainability and provide local and regional social and economic benefits. The lifespan of the development is estimated at 31 years and after this time there is a commitment that the land will be rehabilitated to its natural state to allow the land to be continued to be used for agricultural production.

The proposal is consistent with this Policy.

Riverina Murray Regional Plan 2036

The *Riverina Murray Regional Plan 2036* (RMRP) is a 20 year blueprint for the future of the Riverina Murray. The Plan recognises the potential for growth of the renewable energy industry within the region with renewable energy identified as a priority growth sector. Direction 1 of the RMRP is to protect the region's diverse and productive agricultural land. The Coleambally Irrigation Area, the setting for the development is identified as an important agricultural area which should be protected for long term agricultural production.

Direction 11 of the Plan is to promote the diversification of energy supplies through renewable energy generation. The Plan recognises TransGrid's NSW Connection Opportunities identified Darlington Point as a location with capacity for renewable energy generation. Leveraging renewable energy opportunities for the long-term sustainability of the region depends on adopting a strategic approach to new projects and incorporating small-scale cogeneration measures into the design of new developments.

Murrumbidgee Council Local Strategic Planning Statement

The *Murrumbidgee Council Local Strategic Planning Statement* (LSPS) establishes a 20 year vision for land use planning in the Murrumbidgee Council area. The strategic vision is to experience land use and development outcomes in the future that both benefit the community and minimise environmental impacts. The development of a solar farm is consistent with agendas.

NE6 – Climate change: To ensure land use and development is prepared for the consequences of climate change; and

EG7 – Productive agricultural land: To prevent development that reduces the amount of land available for agriculture.

Murrumbidgee Local Environmental Plan 2013

The relevant local environmental plan applying to the site is the *Murrumbidgee Local Environmental Plan 2013* (LEP). The aims of the LEP include:

- The protection, enhancement and conservation of agricultural and horticultural land through the proper management, development and conservation of natural and man-made resources, and
- The promotion of the efficient and equitable provision of public services, infrastructure and amenities.

The proposal is consistent with these aims as a solar farm facilitates the conservation of energy and renewable resources while ensuring that the lands continuing use for productive agriculture is not diminished.

Zoning and Permissibility (Part 2)

The site is located within the RU1 Primary Production Zone pursuant to Clause 2.2 of the LEP.

According to the definitions in Clause 4 (contained in the Dictionary), the proposal satisfies the definition of an Electricity Generating Works which is a prohibited use in RU1 zone of the Land Use Table in Clause 2.3. The proposal is however permissible with development consent by virtue of Clause 34 the Infrastructure SEPP.

The zone objectives include the following (pursuant to the Land Use Table in Clause 2.3):

- Encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- Encourage diversity in primary industry enterprises and systems appropriate for the area.
- Minimise the fragmentation and alienation of resource lands.
- Minimise land use conflict

When determining a development application on land within a zone the consent authority must have regard to the zone objectives.

The proposal is considered to be consistent with these zone objectives for the following reasons:

- The development will be designed and operated to maintain the resource base. The applicant has committed to preparing a Decommission Plan for the development to ensure the restoration and rehabilitation of the site after the expected 31 year life in accordance with the requirements recommended in this assessment report (Further discussed in Section 4.1).
- The solar farm will encourage diversity in technologies to take advantage of renewable energy and facilitate development at an expected lower economic, social and environmental cost.
- The development site is proposed to be leased and the farm not fragmented, alienated or potentially overcapitalised by subdivision. There is a restriction on the title of the land which prohibits subdivision (further discussed in Section 3.5). The development will incorporate the grazing of stock (sheep) to control weeds under the panels.
- The development has been sympathetically designed and will have measures in

place to control and manage environmental impacts so that there will be minimal potential for land use conflict.

General Controls and Development Standards

The LEP also contains controls relating to development standards, miscellaneous provisions and local provisions that are discussed below.

Clause 5.10 Heritage

The objectives relate to the conservation of built and historic heritage, places of significance and aboriginal objects.	There are no items of built heritage on the development site. A due diligence assessment was carried out in accordance with the *Due Diligence Code for the Protection of Aboriginal Objects in NSW.* This identified that because the development site was disturbed agricultural land that further on site investigation was not warranted. The development is capable of meeting the objectives of this clause provided that in the event an aboriginal object or relic is encountered, work cease and if necessary a Heritage Impact Permit be obtained (further discussed in **Section 3.6**). **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**

Clause 5.21 Flood planning

The objectives relate to minimising flood risk to life and property and ensuring that the development of land was commensurate with the flood hazard, and to ensure safe evacuation and avoid cumulative impacts on flooding and the environment.	The land is not known to have been affected by flooding and is not identified as being within a Flood Planning Area. There is a low possibility of the development being affected by flooding or resulting in flood-related impacts. The development complies with this clause.

Clause 6.1 Earthworks

The objectives relate to ensuring that earthworks will not detrimentally impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of surrounding land.	Earthworks including cut and fill will be required to construct the access on Cockys Lane and to upgrade the existing alternative access on Donald Ross Drive. Earthworks are also required to provide all weather access, internal access ways and hardstand areas including the car parking area, fill for building pads, excavation for pile driven footings, the establishment of landscaping and the erection of fences. The development is capable of complying with the objectives of this clause provided that conditions are imposed for erosion and sediment control, protection of aboriginal heritage and sustainable land management taking into account soil physical and chemical properties and protection

	of biodiversity. Earthworks should be carried out in accordance with *AS3798-2007 Guidelines on earthworks for commercial and residential developments.* Further details to explain and demonstrate compliance with this clause are included in **Section 3.7** Land Capability, Geomorphology and Soils. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**

Clause 6.3 Terrestrial Biodiversity

The objectives are to maintain terrestrial biodiversity by the protection of native fauna and flora and encouraging their conservation and their habitats and protecting ecological processes.	The Kleinfelder (2021) *Coleambally Solar Farm Flora and Fauna Assessment Report Lot 135 DP 750903 Coleambally NSW 2707 NCA21R124675*, identified that the proposed development site contained primarily non-native vegetation, biodiversity would not be impacted and a Biodiversity Development Assessment Report was not required. It recommended that existing trees within or near the development footprint be protected. A review of the *Central Resource or Sharing and Enabling Environmental Data in NSW* (SEED) database revealed that over the entire Lot 135 there were five (5) Plant Community Types (PCTs) mapped as occurring. Some of these PCTs are associated with a state or national endangered ecological community (EEC). These are: PCT 16: Black Box grassy open woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion); PCT 28: White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone; PCT 44: Forb-rich Speargrass - Windmill Grass - White Top grassland of the Riverina Bioregion PCT 70: White Cypress Pine woodland on sandy loams in central NSW wheatbelt, and ; PCT 75 Name: Yellow Box - White Cypress Pine grassy woodland on deep sandy-loam alluvial soils. Although the development site will be enclosed with a perimeter fence and separately leased, there remains the potential that biodiversity impacts may occur elsewhere on the allotment site. This is because of the dual land use (agriculture and solar farm) and through the

	proposed use of the alternative access from Donald Ross Drive for stock or machinery movements (including cranes). The applicant has recently proposed that the larger truck deliveries access the site from Donald Ross Drive. Given that the servicing requirements of the development will involve larger deliveries through the farm and potentially near vegetation communities, it will be necessary to ensure that there will be no significant impacts to biodiversity by these truck movements. This is also important given that are clearing restrictions on site (Further discussed in **Section 3.7**) The protection of vegetation communities can be achieved by ensuring any high value trees near the development site and close to internal access ways are designated and protected and that the CMP include provisions to protect biodiversity on the allotment from all development related activities. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**

Clause 6.4 Groundwater vulnerability

The objectives are to ensure the maintenance of key groundwater systems and protect groundwater resources from contamination arising from development.	The development site is mapped as being in a groundwater vulnerable area. The site is within the Lower Murrumbidgee Alluvium Groundwater Management Area. This area contains both shallow and deeper groundwater resources of the Calivil and Renmark formations, from 40m below the natural surface level. The development does not involve the use or consumption of groundwater resources and will not result in its depletion. There is the potential for degradation of groundwater to occur through leaching of chemicals that may be utilised on site and through nutrients from chemical application and from stock. The development is capable of complying with the objectives of this clause provided that conditions are imposed regulating the storage and use of chemicals or other toxic materials and the appropriate management of stock, weeds and pasture. These requirements should be included within a CMP and OEMP. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**

Clause 6.9 Essential Services

This clause requires the consent authority to be satisfied that services essential for the development are provided-:water, electricity, storm water drainage sewage management and vehicular access	A 22500L water tank is proposed to supply potable water to the development. Power will be supplied by a generator. A new property access is proposed to be constructed in Cockys Lane and the alternative access along Donald Ross Drive will need to be upgraded to facilitate the access of cranes and heavy vehicles. Temporary sanitary facilities will be provided on site with a waste/wastewater holding tank to be serviced as required. The development is capable of complying with this clause. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**

3.2 Section 4.15 (1)(a)(ii) - Provisions of any Proposed Instruments

There are no proposed environmental planning instruments that have been the subject of public consultation, that have relevance to this development proposal.

3.3 Section 4.15(1)(a)(iii) - Provisions of any Development Control Plan

While *Murrumbidgee Development Control Plan 1995 Village* (DCP) applies to the village areas of Darlington Point and Coleambally, it is not relevant nor does it apply to this rural zoned development site.

The following contribution levy plan is relevant pursuant to Section 7.12 of the EP&A and has been considered in the recommended conditions (notwithstanding Contributions plans are not DCPs they are required to be considered):

Murrumbidgee Council Development Contributions Plan Section 7.12 Environmental Planning and Assessment Act 1979

This Contributions Levy Plan is applicable to a development for an electricity generating works. The required contribution is 1% of the project cost which is $64,589.43.

An appropriate condition has been included within the recommended conditions of consent (Schedule 1).

3.4 Section 4.15(1)(a)(iiia) – Planning agreements under Section 7.4 of the EP&A Act

There have been no planning agreements entered into and there are no draft planning agreements being proposed for the site.

3.5 Section 4.15(1)(a)(iv) - Provisions of Regulations

Clause 92(1) of the Regulation contains matters that must be taken into consideration by a consent authority in determining a development application, including:

- If demolition of a building is proposed - provisions of AS 2601;
- If it is proposed on land subject to a subdivision order under Schedule 7, provisions of that order and any development plan;
- *Dark Sky Planning Guideline* if applicable;
- *Low Rise Housing Diversity Design Guide for Development Applications* (July 2020) if for manor house or multi dwelling housing (terraces);
- Consideration of the flooding related *Development Assessment Guideline* where the erection of a building for residential purposes is proposed in *Penrith City Centre.*

None of the matters listed above are applicable to the proposed development.

3.6 Section 4.15(1)(b) - Likely Impacts of Development

The likely impacts of development, including environmental impacts on both the natural and built environments and social and economic impacts in the locality must be considered. In this regard, potential impacts related to the proposal have been considered in response to SEPPs, LEP and DCP controls outlined above and the issues and matters discussed below. Other relevant clauses within this report, that relates to the issues, have been cross-referenced to minimise duplication. The closest neighbouring dwelling is 750m to the south of the south eastern corner of the development footprint.

Context and setting	The development is compatible with its context and setting. The 16.1 Ha footprint is of a scale well below other larger solar farms in the vicinity, has been designed and is sited away from main roads and sensitive receptors so as to be mostly visually unobtrusive. The size of the solar arrays, their configuration and height are not in themselves overwhelming. The development's mass, bulk and density is not intrusive. Its appearance will be softened by landscaping that is proposed outside of the perimeter fence and potential visual impacts are further reduced as a result of the proposed boundary setbacks. The development is considered to have minimal impact on the rural setting in which it is proposed. The existing agricultural land use will be retained by the continuation and periodic use of sheep grazing to manage weeds. The context and setting of the development is appropriate.
Access	Access to the development site is via Cockys lane, an unsealed dirt road which is crossed by the Tubbo supply channel at the north and the Boona supply channel further south. A standard rural access is proposed to be constructed from Cockys Lane to allow vehicles to enter and leave the site safely without detrimentally affecting the natural environment or affect the flow of traffic. The setback of the proposed entrance gate is well away from the property boundary, about 37m, and the proposed access will be designed so that large vehicles will not overhang the road. The SEE states that the access to the property will be designed so it achieves the relevant sight distance and meets the Council

requirements with a 4m all weather internal access track to the entrance gate of the perimeter fence.

A south – western access gate is proposed to allow sheep to graze from the farm and into and around the development site.

During construction there will be the requirement for a crane to access the site which will be via the alternative farm access off Donald Ross Drive due to bridge restrictions. The applicant has recently proposed that the five large deliveries shall access the development site also from the alternative access which will need to be upgraded to cater for the largest delivery vehicle.

A road opening permit will be required to be obtained from Council and both accesses designed and constructed in accordance with Councils *Standard for a Rural Property Access Drawing SD-D14(B)* or as otherwise specified in a road opening permit under s138 of the Roads Act.

An appropriate condition has been included within the recommended conditions of consent (Schedule 1).

Traffic

Traffic volumes are expected to be low with ten light vehicles needed to transport construction employees generating a total of 20 trips (in/out) per day. Upon commissioning of the solar farm, there would be an ongoing requirement for two light vehicles to access the site for maintenance purposes every six months.

During construction, deliveries of solar array components would mostly be via 12.5m rigid trucks with other larger equipment and assemblages such as inverter, transformers and power station delivered in 19m semi-trailers. The semi-trailers used for the larger equipment are expected to service the site in the fifth month after project commencement with up to three vehicle movements per day during a three week window.

The applicant has recently advised that delivery of the heaviest construction equipment will access the site from Donald Ross Drive to reduce the potential for damage to the irrigation bridges.

The recommended heavy vehicle route is from the north east turning off the Sturt Highway at Main Canal Road then via Wallace Road onto Cockys Lane. Light vehicles will access the site utilising the local road network from nearby centres and are most likely to use Kidman Way and Donald Ross Drive.

The Trafficworks (v3, 2021) *Solar Energy Facility 1207 Donald Ross Drive, Coleambally NSW Traffic Impact Assessment*, prepared for the development concluded that there will be minimal traffic related impacts associated with the development providing that the requirements of Coleambally Irrigation and Council are met. This is discussed in more detail in **Section 4** of this report.

To manage and minimise traffic related environmental impacts the applicant has proposed some upgrading of Cockys Lane including:

	• Gravelling the frontage of neighbouring Farm 2 dwelling extending 100mm north and south, • Gravelling 20m north and south of the Boona channel bridge and sealing 20m north at the Cockys Lane and Wallace Road intersection. This is also discussed in further detail in **Section 4** of this report. A set down loading and car parking area is proposed to accommodate vehicles expected to utilise the site and the TIA confirms the adequacy of the local and classified road system to cater for the traffic generated by the development. Given the findings of the TIA, the proposed mitigation measures to be implemented and the short duration of the construction period it is considered that traffic impacts from the development will be acceptable **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Air Quality	Concerns have been raised that dust will result from on-site construction activities as well as from vehicles using Cockys Lane. The applicant has proposed several mitigation measures to reduce the likelihood and extent of dust nuisance, including: • The scheduling of deliveries by rigid trucks in the morning when soil moisture is higher; • Using a water cart to spray down surfaces in windy conditions and the measures mentioned above relating to road pavement improvement works along Cockys Lane; and, • Restricting the speed of delivery vehicles, from the length of Wallace Lane to the solar farm. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Visual amenity, glare & public domain	The development is proposed in a sparsely populated and relatively isolated rural location, on flat ground and well setback from Cockys Lane and property boundaries. The structures are not overwhelming in their height and dimensions and the visual impact of the development will be softened by perimeter landscaping. The solar panels are non-reflective and the fixed tracking system of the panels will minimise the incidence and potential for glare. Given the location away from classified roads and other dwellings (with the exception of Farm 2) the visual impact to sensitive receptors and the public domain is considered to be acceptable. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Noise & vibration	The Farm 2 dwelling is the nearest neighbouring dwelling and there are no other occupied dwellings within 2km of the development site. Although the dwelling has a 25m setback from

the road and is relatively screened, there still remains the potential for development traffic to impact the residents' lifestyle and amenity.

This is most likely to occur during construction and particularly when the footings for the solar panels are pile driven into the ground. In order to reduce the potential for adverse impacts the applicant has proposed mitigation measures that include ensuring the five heaviest deliveries access the site from Donald Ross Drive, and generally restricting noisy construction activities and deliveries to daylight hours, where possible. The *Draft Construction Noise Guideline, 2020* sets out a framework for the management of noise during construction activities for both scheduled and non-scheduled activities. It identifies that construction should be scheduled during recommended standard hours to reflect greater sensitivity to noise during the evening and night-time and on weekends and public holidays, except where this is not practical and justified. It also recommends that developers engage with the community or affected neighbours to provide information about the project on an ongoing basis and where possible try to find solutions that are acceptable to them. The recommended hours for construction work in the guidelines are 7am-6pm weekdays, 8am-1pm Saturday and no work on Sunday and public holidays. These are the hours proposed by the developer, are acceptable and will be imposed, if the development is approved.

The proposed road improvement works will also minimise the chance of road pavement corrugations which would result in uneven surfaces and rougher and noisier vehicle movements.

Although the development would require an estimated 50 workers per day over the 6 month construction period, groups of workers are proposed to be conveyed to the development site in large passenger cars which will also reduce the required daily number of vehicle movements and will minimise the likelihood of noise disturbance from traffic.

Given the suite of mitigation measures proposed by the applicant including restricting the speed of vehicles using Cockys Lane to 60km per hour with 10km over the bridges, scheduling of deliveries and some road upgrade works, it is considered that noise impacts will be, for the most part insignificant and acceptable. This is particularly so given the location within an agricultural environment where 24 hour farming activities are routinely carried out throughout the year. Land use conflicts from noise are likely to be low.

Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).

Biosecurity

The primary biosecurity issue associated with the development is around the management of weeds in and around the development site including the road reserve. If permitted to spread to their full potential, most weed species can impact extensive areas of land. While it is unrealistic to think that weeds can be controlled or restricted to the development site they

should be managed in accordance with the principles of the *Australian Weeds Strategy 2017-2027.* The Strategy recommends risk based prevention and early intervention as generally the most cost-effective approach for managing weeds.

The applicant has indicated that a CMP and an OEMP will be prepared that include provisions to manage weeds. Measures will include guidelines for the continuing crash grazing of sheep on the land as well as the use of herbicides and periodic slashing to assist in keeping weeds to an acceptable level. The formation and maintenance of an APZ that includes an all-weather access road around the footprint perimeter will assist in limiting invasive plants and their seed dispersal from the site.

The transmission of Spiny Burr Grass presents a particular risk to the agricultural industry. The key to the effective control of Spiny Burr Grass is to prevent seeding and exhaust any reserves of seed in the soil. This can be achieved through integrating cultivation, herbicide application, increasing competition through good pasture establishment, management and cropping. Spiny Burr Grass is highly transmissible via vehicular movements including farm machinery. To mitigate the risk of its spread, the applicant has proposed that vehicles will be required to avoid travelling, stopping or encroaching upon the road reserve near the development site.
This measure is useful but would be difficult to enforce and it is recommended that signage be used to promote awareness of the risk and as a deterrent.

The CMP and OEMP should require an integrated approach to the control and management of Spiny Burr Grass in accordance with NSW Department Primary Industries WeedWise *"Control of Infestations on Roadsides".*

Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).

Water Resources

Surface waters may be impacted if contaminated drainage is discharged off site to external drainage channels (receiving waters). Groundwater may be detrimentally affected if contaminants such as chemicals or nutrients leach into the groundwater system or if suspended solids enter the channel system. The map of *Hydrologic Groups of Soils in NSW* provides an estimation of soil groups according to the four class system (A-D) where Class A has high infiltration rates even when thoroughly wetted and moist. These soils have a high rate of water transmission. The north western part of the site where there are cracking clays have been mapped as being in what is referred to as the Class B Hydrologic Group with the lower sandier soils to the south east in the Hydrologic Group Class A with high infiltration rates. It is especially important to manage the risk of leaching to groundwater in this area.

CICL have a series of piezometers throughout the irrigation area to measure ground water conditions of the unconfined Upper Shepparton groundwater formation (<12m depth) and the Lower Shepparton formation (12m-60m depth). To ensure contamination does not occur in their irrigation system, and as

	an additional safeguard for land use activities draining to them, CICL undertake regular water testing and monitoring of irrigation channels in the area. The monitoring is a requirement within their *Scheduled Activity* licence under the *Protection of the Environment Operations Act*. If triggers are exceeded actions are implemented in accordance with the NSW EPA (2017) *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-Use Planning Decisions* under the *Australian Water Quality Guidelines Framework.* The CICL Annual Compliance Report 2020 indicates that over the annual monitoring period, of the 737 licensed piezometers that were read, 84 were recorded as being dry. The data showed that only 3% of the mapped groundwater was within 0-4m of the surface. The piezometric level mapped in the vicinity of the development site is well below that, at approximately 10m depth. Given this, there is minimal potential for degradation of surface and groundwater resources provided controls are implemented to manage stormwater and the handling, storage and application of chemicals, nutrients and other toxic substances. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Land Capability Geomorphology and Soils	The site where the development is proposed includes two landscape types being, the *Murrumbidgee Depression Plains* north and east and which contain Vertosols (reactive grey cracking soils with a high shrink-swell potential), and the *Murrumbidgee Scalded Plains* further south and west containing Rudosols. The landscape and soil types explain the different land capability classes that exist on site. Rudosols are formed from the weathering of rocks and have a lower fertility rate and a land capability class of 6 while Vertosols have a Land Capability class of 3, which is a more productive class able to sustain more agricultural land uses. These spatial differences of soil properties means that different management actions may be required to ensure that soil condition, environmental functions and processes, cultural or heritage items or features of surrounding land are not detrimentally affected by the development. The most significant issue identified for land management over the site is the high risk of soil structural decline. To minimise this it will be important to ensure that soil organic matter is not depleted, soil loss does not occur, erosion and drainage is managed and land compaction minimised. This means implementing measures to support ground cover while managing weeds and fire risk and ensuring that vehicular and pedestrian trafficable areas are appropriately designed, constructed and delineated to control and regulate as much as possible vehicle and pedestrian movement. Buildings and structures must be appropriately founded with excavation, cut and fill designed to minimise soil displacement. Pile driven footings should comply with *AS 2159 Piling-Design and Installation* and wet weather activities minimised or controlled.

	Pasture, weed, chemical and nutrient management will also be important to protect the soil physical and chemical properties so that their condition is healthy and capable of agricultural production into the future, (further discussed in **Section 4.1**) The applicant has indicated that all trafficable surfaces including access ways will be appropriately designed and chemical use, erosion and drainage controls, stock, weeds and pasture management actions will be incorporated within a CMP and OEMP for the development. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Biodiversity	The impacts to flora and fauna have been considered with reference to *Clause 6.3 Terrestrial Biodiversity* in **Section 3.1** of this report. There are expected to be minimal impacts to biodiversity on and near the development site. There are no trees within the footprint area and the applicant has proposed that the Cypress Pines in the front setback area and the Black Box outside the northern boundary will be protected during the construction phase. Restrictions on the land already prevent vegetation clearing within specified zones. Given that some machinery and trucks will access the site from the south, protocols should be in place to ensure that vehicles will travel along defined tracks away from significant vegetation. Tree protection measures have been proposed by the applicant and will be incorporated in the CMP. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Heritage	The SEE includes a Due Diligence Assessment prepared in accordance with the Department of Environment and Climate Change (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.* The assessment concludes that because the land is disturbed agricultural land further detailed site investigation is unwarranted. A review of the Mitchell Landscapes (v.3) mapping over and surrounding Lot 135 shows three landscape types including one that is associated with a prior stream - the *Murrumbidgee Source Bordering Dunes* located at the south and west of the allotment away from the development footprint and within the alternate access route from Donald Ross Drive. Prior streams have a strong association with Aboriginal occupation and accordingly there is a potential for aboriginal objects to be found during construction. Given this, an “Unexpected Finds Protocol” should be developed and incorporated within a CMP to ensure the protection of aboriginal heritage during construction. **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Other land Resources	The development is not in a water catchment area nor known to contain significant minerals or other geological resources. The lifespan of the development is estimated at 31 years after which the development will be decommissioned and the land

	rehabilitated to its natural state so that it can continue to be used for productive agriculture. There are no known other land resources that are likely to be affected. The applicant has indicated that a Decommission Plan will be prepared for the development. **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Utilities	Essential services that are considered suitable and necessary for the development will be provided. This includes property access, power (generator), water supply (tank), and sewage disposal. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Waste	Waste generated through the construction phase will be removed from the site and either recycled, or disposed of at a resource recovery or waste management facility. Murrumbidgee Council has previously had issues with large volumes of waste from solar farms being deposited in local landfills with limited volumetric capacity. A Waste Management Plan (WMP) will be required to be developed in conjunction with Council should disposal in the Coleambally landfill be proposed. The ongoing operation of the solar farm is not likely to result in waste generation and at the end of life, the development will be decommissioned and all infrastructure removed from the site and where possible recycled or reused. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Natural hazards	The development is not situated in a mine subsidence area, an area with acid sulfate soils or within the flood planning area. The development footprint is surrounded by unmanaged grassland, an assessment was carried out in accordance with the NSW Rural Fire Service (2018) *Planning for Bush Fire Protection* Guidelines, and a *Bush Fire Emergency Management and Operations Plan* (BFEMOP) submitted with the development application. The matter of bush fire, required mitigation measures to manage the risk and the adequacy of the BFEMOP is discussed within **Section 4.1** of this report.
Technological hazards	The development is subject to technological hazards associated with solar panels however, the risks are considered to be low. The Battery Test Report (No 50285207001) submitted shows that the secondary cells and batteries proposed to be used meet the safety requirements for lithium cells and batteries for use in Industrial applications. Each BESS container will have a built-in ventilation and air/liquid cooling system to prevent thermal runaway in battery cells and will also include an automatic fire detection and extinguishing system. Each container will also be designed to isolate any thermal runaway and fire from adjacent BESS containers. Ventilation around the BESS containers will comply with *AS5139 Electrical Installations – Safety of battery systems for use with power conversion equipment*; the manufacturer's requirements and/or safety data sheets for

	battery storage. Fire extinguishers will be provided near the site entrance and BESS installations. A rainwater tank with a capacity of 22,500L will also be provided at site and the groundcover vegetation within 10 metres of all containers will be managed, including grasses. Materials used in the construction of solar modules have the potential to be recycled following the decommissioning of the site. All infrastructure will be removed at the end of life reducing any risk to public health and the local environment. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Safety, security and crime prevention	The development will have real-time remote monitoring allowing for constant surveillance without the need for on-site staffing. This will assist in responding quickly to emergencies. The emergency management mitigation measures are proposed to be incorporated within a CMP and an OEMP. The site and infrastructure will be secure, surrounded by a wire perimeter fence with an 8m wide security gate at the Cockys Lane frontage. Safety impacts from vehicle movements are discussed within **Section 4.3** of this report. Signage is also proposed at the frontage that will include emergency contact details. **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Socio- economic	The SEE has identified that 50 people will be working at the site during the development construction phase and that several local contractors will carry out minor maintenance works over the operational life. There is a prediction that additional employment opportunities may eventuate from the supply of goods and materials that will be required to support the construction. ACEnergy, Mara Consulting (2021) *Social Impact Assessment, Coleambally Solar Farm* identifies that a high percentage of the community support solar farms. 78% of those surveyed, supported solar farms within a radius of 1-2km of where they live. Currently 17% of Australia's overall energy supply is from renewables and research has found that States with higher levels of renewable energy had a far lower electricity price. The potential to generate 5MW electricity could power 1000 homes during daylight hours and reduce carbon emissions by over 100,000 tonnes during the 31 year life of the project.
Site design	The solar farm has been designed so that it is fit for purpose while minimising environmental impacts. The development's configuration and footprint has been subject to a minor amendment during the development assessment. The footprint has been reduced from the original 18.12 Ha proposed to 16.1 Ha and the configuration has been changed to avoid a drainage line at the south. The location of the landscaping has also changed from inside the security fence to outside. The design takes into account the setting in which it is proposed. It is setback from boundaries and the road reserve to achieve some separation and minimise environmental impacts.

Construction	A range of potential impacts from construction have been identified throughout this Assessment Report. The applicant has proposed and will be required to prepare a CMP and OEMP if the development is approved. The CMP that was originally submitted with the development application will need to be expanded upon to reflect the requirements and recommendations contained within this planning report. Other management plans that have been discussed throughout this report and that may form part of or additional to CMP will relate to waste, traffic, bush fire, landscaping, hazard and risk and decommissioning. The developer has also proposed to have other systems in place to manage safety and impacts during the construction phase including the preparation of environmental, safety and quality assurance management systems. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Hours of Operation	The hours of operation of the development has already been discussed above under *Noise and Vibration*. The recommended hours for construction work are 7am-6pm weekdays, 8am-1pm Saturday and no work on Sunday and public holidays. The developer has indicated that non-intrusive activities may occur outside these hours from time to time **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Buildings	A "permanent" building that will be on the site for duration of the operational life of the solar farm is the HV switchboard platform (Class 10a or Class 8) for which a construction certificate and an occupation certificate will be required. Plans show it will be supported on four (4) pad footings. The Land and Environment Court has held that shipping containers come within the definition of a "building" to which the BCA applies. The five (5) BESS shipping containers each separated by 2.5m, are, in this instance, not considered to be buildings because the applicant has submitted diagrams and details to demonstrate that the containers are not capable of being occupied, are prefabricated off site and is simply the housing of the inbuilt battery systems. Because it is considered that they do not constitute buildings, the BCA does not apply and a construction certificate is not required. However, like temporary structures and permanent buildings they must be installed or founded so that they are able to resist the most critical loads and forces that they might be exposed too (i.e. racking forces, deflection, uplift forces) as per *AS1170:1,2,3 Structural Design Actions*. Plans submitted with the application show that each container is supported on eight (8) pad footings, spaced at three (3)m centres each approximately 1m deep. The central inverter is also not considered to be a building and the submitted plans show that it is proposed to be supported on ten (10) pad footings at approximately 1m depth.

	It is important that the installation, founding of the BESS containers and the inverter be designed and certified by a professional engineer. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).**
Cumulative impacts	Potential cumulative impacts have been considered and determined to be insignificant in the *Social Impact Assessment* report and later using the Major Projects *Cumulative Assessment Guideline*. This matter is also discussed in **Section 4.1** in the applicant's response to DPI's comments on the development proposal.

The applicant has proposed that all commitments and mitigation measures proposed as mentioned above and throughout the report will be incorporated with or be included within a CMP and OEMP to be provided for the development.

Based on the above there is unlikely to be any significant adverse impacts as a result of the development subject to the recommended imposition of conditions.

3.7 Section 4.15(1)(c) - Suitability of the site

Restrictions and covenants over the land

There is a Crown Lands covenant over Lot 135,145 and 146 being Farm 120 - perpetual Lease 176648. The area of the Covenant of Zone A is 64.45 Ha and details discussed below.

Lot 135 does contain an Order made under Section 88D(2) Conveyancing Act 1919. Schedule 1 is a restriction on the use of land (prevention of subdivision) under S77B(1)(a) of the Crown Lands Act 1998. Schedule 2 are restrictions on the use of the land explained below (freehold Crown Estate) under S77A of the Crown Lands Act, 1989. The restrictions including the prevention of vegetation clearing are measures that were required by Crown Lands on the conversion of Crown land "leasehold" to Crown land "freehold".

The Schedule 2 restrictions on the use of land apply to several parts of the lot that have been separately identified as Zone A and Zone B. These zones are located south and west of the development site and away from the development footprint. In both zones clearing of vegetation is not permitted.

In zone A additional agricultural works cannot be carried out. The works that are restricted includes tillage, herbicide application, establishment of non-native crops or exotic pasture, clearing or removal of standing or fallen deadwood for commercial use, logging and removal of soil or inorganic material.

The restrictions apply to the zone except where actions are authorised under other legislation such as the Rural Fires Act. Specified management actions are permitted to be carried out that are identified in the Order. These include the control of pest weeds and animals, traditional aboriginal activities and actions to manage serious risk to life or property. Minimal clearing associated with boundary and internal fencing, roads and tracks is permitted, and the maintenance of utilities including that associated with the transmission of electricity that is authorised by Essential Energy. The restrictions exclude certain electricity maintenance activities such as the construction of new access roads or tracks and removal of low growing groundcover, or the exceedance of specified safety clearances. There is also a water supply

easement that affects adjoining Lot 146. The easement and the restrictions of the Order do not affect or are likely to be impacted by the development of the solar farm and associated activities.

The development site does not contain any significant constraints and can be appropriately serviced. Land restrictions, hazards and risks have been identified, can be reasonably controlled and managed and potential environmental impacts mitigated. The site is considered suitable and able to sustainably accommodate the solar farm development.

3.8 Section 4.15(1)(d) - Public Submissions

Public submissions are considered in **Section 4.3** of this report.

3.9 Section 4.15(1)(e) - Public interest

The development is consistent with the relevant planning controls and regional strategies. It offers social, economic and environmental benefits to the community and contributes to reducing the impacts of climate change. An agricultural nexus remains with the development during its 31 year expected operational life and after the site is decommissioned and rehabilitated, productive agriculture can be continued into the future. The development is consistent with the 'precautionary principle' and the principles of ecologically sustainable development. The assessment undertaken in this report concludes that the development is in the public interest.

4. REFERRALS AND SUBMISSIONS

4.1 Agency Referrals and Concurrence

The development application has been referred to various agencies for comment as required by the EP&A Act and a summary of comments made is provided in TABLE 4 below.

No concurrence or notification was required under s 5.31 EP&A Act in relation to infrastructure corridors. The NSW Rural Fire Service was notified under s4.15 given the development site is surrounded by grassland.

TABLE 4

Concurrence and Referrals to agencies

Referrals

The application was referred to the following agencies for comment:

- Essential Energy
- NSW Department of Primary Industries
- Coleambally Irrigation
- Griffith Local Aboriginal Lands Council
- Riverina Local Land Services
- NSW Rural Fire service
- NSW Department of Planning Industry and the Environment
- Natural Resource Access Regulator

Agency / Organisation	Comment and Responses
Essential Energy	Essentially Energy requires that any existing encumbrances on the property should be complied with. Activities undertaken within the location of electricity infrastructure must be undertaken in accordance with the ISSC 20 Guideline for the Management of Activities within Electricity Easements and Close to Infrastructure. Easements for electricity will be required to be created as part of the design approval, **Assessing officer comment:** Noted. **Assessing officer comment:** These are reasonable requirements. **The requirements of Essential Energy have been included within the recommended conditions of consent (Schedule 1).**
NSW Department of Planning Industry and the Environment (DPIE)	The development assessment should address the matters for consideration provided in Section 4.15 of the EP&A Act and the requirements of relevant state legislation, policies, strategies and plans. **Assessing officer comment:** These matters are addressed in this report.
NSW Department of Primary Industries (DPI)	(a) Avoidance of prime agricultural land. The development footprint comprises 50% Class 3 land being land of moderately good productive capability and questions why this higher quality agricultural land is not avoided. **Applicants Response**: About half of the 18ha development footprint is sited on Class 3 land with the remaining 9Ha on land with a lower capability Class 6. Lot 135 comprises approximately 81Ha of Class 3 land and the amount covered by the development is just 11% of this. The development has an estimated lifespan of 31 years and at the end of its life will be decommissioned and the site rehabilitated so that the land can continue to be used for agricultural production. **Assessing officer comment:** There is a range of eight land capability classes with Class 1 land being good quality, unconstrained agricultural land and Class 8 land being the most constrained. The siting of the development on 9ha of Class 3 land is not considered unreasonable given the size of the landholding, the continuing use of grazing on the site and the extent of surrounding highly productive irrigation land. It is noted that the footprint has since been reduced from the 18.12 Ha originally proposed to 16.1 Ha which also limits the impact on productive agricultural land. The developer has provided a letter dated 29 July 2021 confirming that a contractual agreement has been executed with the landowners for the “Make Good and Decommissioning of the Site”. A Decommission Plan will be required to be prepared for the site so that after the solar farms operational life all associated infrastructure

Agency / Organisation	Comment and Responses
	shall be removed and the land rehabilitated. **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).** (b) Assessment of Cumulative Impacts No analysis has been made of the cumulative impacts from multiple solar farm developments in the area. **Applicants Response:** In response to the concerns of the Department, a Cumulative Impact Assessment was carried out. The assessment determined that according to the criteria of location, status, timeframes, scale and status the cumulative impacts were negligible. **Assessing officer comment**: There is some concern about the possible proliferation of solar farm and battery energy storage systems in the local area and their potential contribution to population loss and reduced socio-economic capital. This is despite the region being strategically identified as suitable given it's advantages of climate, land use and topography. DPIE, *Cumulative Impact Assessment Guidelines for State Significant Projects* July 2021 is used to assess cumulative impacts for state significant projects at a strategic level. Although the current development proposal comprises local development, the Assessment Guidelines are a useful indicator of cumulative impacts. Currently the number of such developments are quite low although several more are already being planned. Given the current circumstances including the limited 31 year lifespan, the conclusions of the impact assessment are justified. (c) Management Plans DPI supports the preparation of a Pasture Management Plan to ensure the soil is protected from erosion and degradation over the life of the solar farm. Other recommendations include the preparation of a Weed Management Plan that is developed in conjunction with the landholder and a development Decommissioning Plan, where all above and below ground infrastructure is removed to allow cropping to be conducted post development. The Department suggests that benchmarks be applied to the development to assess and determine whether rehabilitation has been successfully achieved. This could include recent yields and returns over various seasons with the option of comparison with other similar sites if the development is established before baseline conditions can be identified. **Applicants Response**: Noted. A Weed Management Plan, Pasture Management Plan and Decommission Plan will be prepared and implemented for the development **Assessing officer comment**: It is appropriate that the applicant prepare and implement the abovementioned plans. The applicant has proposed that not later than 12 months prior to the proposed cessation of operation, a Decommissioning Plan will be prepared

Agency / Organisation	Comment and Responses
	and provided to Council for review and approval. The objective being the restoration of the land to its pre development condition for continued agricultural use. It is important that the required outcome for land rehabilitation is able to be measured and quantitatively assessed to determine its success, otherwise why require its development and implementation. DPI has suggested that parameters of agricultural productivity such as "yields" be used as a benchmark to better assess and determine whether the rehabilitation has been successful. While this would be useful, seasonal variability and agricultural inputs require an assessment of yields over a number of seasons to reasonably identify what the average yield is. In my opinion, it is necessary to identify or develop both a suitable method of analysis and scientific and quantifiable parameters that can readily be measured prior to the commencement of the construction and used as an indicator of "land condition". This would require the use of a scientific "*rapid assessment method of agricultural condition*" (similar to that used in assessing riparian condition) that could be used as a tool for comparison of abiotic (soil, water, air) properties pre and post development. This would require that soil and water physical and chemical properties, commonly used in agriculture, be tested early in the planning phase. Typical measures include hydraulic conductivity, soil compaction rates, salinity, cation exchange capacity, nutrient loading, plant phosphorous adsorption and surface and ground water quality. These measurements can aid in quantifying the "reference" or baseline conditions of the site prior to development and those at the development decommissioning stage. Because it is necessary to identify these properties at the start of the development, it is more appropriate that the Decommission Plan be prepared prior to commencement of construction including the derivation and adoption of the *rapid appraisal method* and the scientific parameters. **An appropriate condition for the above and the requirements of DPI have been included within the recommended conditions of consent. Noting that the requirement for the decommission Plan has been separately conditioned. (Schedule 1).**
Coleambally Irrigation Co-operative Limited (CICL)	CICL identified the following matters in relation to road trains, the channel crossing restrictions and the management of fire and bush fire hazard <u>Road trains</u> The TIA does not detail the conditional approval on road trains **Applicants Response:** Road trains will not be utilised to service the development and the TIA has been amended accordingly. **Assessing Officer comment:** Noted <u>Constraints of Cockys Lane irrigation bridges</u> The Tubbo channel bridge has a 20 tonne gross mass limit that applies and the axle group loadings for HML vehicle access would

Agency / Organisation	Comment and Responses
	exceed the axle group loadings of the Boona Channel. No crane should use the bridge over the Tubbo channel due to structural constraints. **Applicants Response:** Vehicles crossing the Boona bridge will be required to comply with GML axle group loadings specified in the Common Heavy Freight Vehicle Configurations chart prescribed by the National Heavy Vehicle Regulator. Vehicles crossing the Tubbo channel will be required to comply with the gross mass limit of the bridge. Cranes will be required to access the development site through the alternative farm access on Donald Ross Drive. **Assessing Officer comment:** The requirements of CICL to protect the Boona bridge include that: • There is only one vehicle on the bridge at a time and "NO OVERTAKING OR PASSING" signs should be installed at this bridge. • Trucks should allow dust to clear from the previous truck so they can see there is no oncoming vehicle at the bridge. • Trucks should travel in the centre of the bridge deck to reduce the risk of damage to the edge beams. • A speed restriction of 60km/hr should be imposed to limit the speed of trucks to reduce the risk of dynamic load on the bridge beams. It is impractical to enforce trucks to slow down at potholes and it is the developer's responsibility to ensure that the condition of the road is maintained as part of the monitoring that will be required to fulfil the objectives of the Dilapidation Report that will be required to be prepared for the development. The site supervisor should regularly liaise with the CICL asset manager to organise any necessary maintenance to the bridge approach that might be required. The applicant has responded to concerns about the bridges' structural capacity to take heavy/large vehicles by requiring cranes and the heavier deliveries to use the alternative access on Donald Ross Drive. As this means crossing Lot 146 DP 750903 to access the development site, there will need to be a formal agreement to use this allotment for the purpose of access as required during the construction period. The TIA mentions that all rigid trucks and heavy vehicles will access the site from the east and will not use O'Neil Road nor cross the Tubbo Channel bridge that has gross load limits. A Traffic Management Plan is proposed and will be required to satisfy these requirements. **The requirements of CICL have been included within the recommended conditions of consent (Schedule 1).** <u>Fire Management Plan</u> The Plan lacks detail with regard to how solar panels are de-energised so it is safe to use water to extinguish a grassfire. The location of cable trays needs to be detailed as they may prevent access to rows between the panels. The detail of the spacing between rows is requested as they appear to be too narrow to allow access by fire trucks. <u>Applicants Response:</u> The solar farm system is designed to be

Agency / Organisation	Comment and Responses
	switched on/off from the grid remotely. Engineers will be automatically alerted in the case of a small electrical fault and if required a nominated representative will attend the site, particularly during a total fire ban. Grass will be maintained at a low height and should a fire occur it should not escalate catastrophically or spread to neighbours given the construction of 10m wide fire break between the solar array and the security fence as per the RFS guideline. Four x 9kg dry powder extinguishers will be fixed on site near the central inverter container that houses the transformer. Remote monitoring ensures that should a fire ignite both emergency services and the landholder will be notified to respond. After hours, contact will be made available with an emergency response of one hour expected and 4 hours otherwise. Cable trays are not utilised and all cabling is below ground. Row spacing is 3.9m between arrays with 7m access ways. The solar farm has been designed in accordance with RFS Guidelines and spacing between rows 3.9m and internal access 7m are compliant. **Assessing Officer comment:** The applicant has proposed a range of active and passive measures to manage fire and safety risks and hazards that are discussed elsewhere in this report. These measures including planning, separation, ventilation, cooling systems, fire extinguishers and automatic alarm and detection systems as well as remote surveillance to respond to fire and emergencies. The measures proposed by the developer are considered appropriate given the risks and commensurate with other similar developments. The BFEMOP will need to be amended to be more detailed in response to the RFS and PBP requirements and should be prepared by a properly accredited person with Fire Protection Australia (FPA). Recommendations and measures should be incorporated within the developments CMP and OEMP as appropriate. **Appropriate conditions have been included within the recommended conditions of consent (Schedule 1).** <u>Tree Planting</u> Tree planting within the perimeter fence may constitute an increased fire hazard. **Applicants Response:** The proposal has been amended so that landscaping will be planted outside the perimeter fence and a 10m APZ maintained between the fence and the development assets to reduce fire hazard. **Assessing Officer comment:** The design of the solar farm has been modified to incorporate landscaping outside the fence to soften the development. The APZ proposed will be in accordance with RFS *Planning for Bushfire Protection 2019*. **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).** <u>Lithium batteries and fire hazard</u> Lithium batteries in a small space may be a fire hazard if one section

Agency / Organisation	Comment and Responses
	of storage fails. More detail is required on the method of cooling of lithium batteries to be incorporated into fire prevention management plans. **Applicants Response:** The batteries are each fitted with an air/liquid cooling system and fire suspension system to ensure normal operation of batteries and to minimise fire hazard during a fault condition. The air cooling mechanism takes away heat generated during the battery's normal operation via convection. The liquid cooling mechanism achieves the same purpose via conduction, where water at a low temperature absorbs heat from batteries as it flows past battery modules and expels the heat to the ambient environment. The cooling system would operate simultaneously with the batteries to prevent overheating and associated fire hazards. The battery chemistry proposed, Lithium Iron Phosphate (LFP), is the most reliable and safest technology among currently available products. The chance of batteries catching fire is extremely low and they would not contribute to the fire or accumulation of heat. **Assessing Officer comment:** Lithium batteries have been used for some time in solar farms and are considered generally safe with a lower risk of thermal runaway (an increase in temperature leading to fire) than others such as nickel manganese cobalt (NMC). <u>Water Supply</u> There is no detail on how water will be supplied during the construction and operational phase and whether irrigation water will be required. **Applicant response:** Channel and groundwater shall not be used and the maintenance contractor will ensure that the tank is replenished on a regular basis. **Assessing Officer comment:** A dedicated 20,000 L fire fighting water tank will be provided on site to meet the requirements of RFS *Planning for Bush Fire Protection, 2019* with fittings to comply with the Guidelines, **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Griffith Local Aboriginal Land Council (GLALC)	No response received **Assessing Officer comment:** While no response has been received from GLALC potential impacts to aboriginal heritage has been considered in **Section 3.7** of this report.
Riverina Local Land Services (LLS)	No objection **Assessing Officer comment:** Noted
NSW Rural Fire Service (RFS)	The DA was referred to the RFS under s4.15 of the EP&A because there is grassland in and around the development site and exotic grasses are likely to seed and establish in places once the site is developed. The development application included an assessment under PBP and a BFEMOP was included with it.

Agency / Organisation	Comment and Responses
	The assessment details the relevant PBP requirements and the plans and documents submitted by the applicant shows that the construction and operation of the development will comply. This includes the APZ to be managed as an inner protection area (IPA) as well as construction standards, essential services, infrastructure housing, construction of access ways and emergency management planning. The conditions recommended by the RFS to be imposed for the development are replicated at the end of this part in the Assessing Officer's Comments. The RFS commented upon the existing dwelling on the site that the landowner states is unused. They recommend it be upgraded to protect against ember attack and protected with an APZ if Council considered that the dwelling would be occupied in the future. **Applicant response:** The dwelling is unused, not associated with the development and the site is not mapped as bush fire prone land and no bush fire protection requirements should be applied. A 10m APZ, managed as an IPA will be established and maintained within and around the perimeter of the development. The applicant later clarified that this would not include any shrubs or landscaping and will include the access road. Essential services as required will be provided and all equipment housed to comply. The property access will comply with Section 7.4 of the Guidelines. The landowner has advised that the dwelling is unused and an APZ should not be required or any upgrading for fire protection because it is away from and not associated with the development. **Assessing Officer comment:** Although the dwelling may be currently unused, it is in reasonable condition and considered suitable for habitation. During a recent inspection, there was evidence of recent occupation. The dwelling is situated 750m away from the stock fence and because the landholder has advised that the dwelling will not be occupied it is unreasonable to require it to be upgraded, even though it is connected by grassland. The applicant has committed to complying with the requirements of RFS and PBP guidelines. The design of the development has been amended to take into account the concerns raised and to achieve compliance. The landscaping plan has changed in that the location is outside of the perimeter fence, the species planted and placement have been changed so that they are more suitable to address the requirements. A landscape plan has recently been submitted that demonstrates the requirements are satisfied. The layout has been modified and the perimeter APZ will incorporate the required 4m all-weather access road. The applicant has confirmed and it is shown on the revised site plan that a 20,000L dedicated fire - fighting static water supply tank will be provided on site. The tank will need to be provided, replenished and maintained for the life of the development.

Agency / Organisation	Comment and Responses
	Although a BGFEMOP has been submitted with the development application it could be improved by including more detail so as to promote confidence that the requirements of the RFS & PBP will be satisfied during the construction period and over the life of the development. It should be prepared with the assistance of or endorsed by a person experienced in bush fire planning and accredited with Fire Protection Australia (FPA). The recommended conditions of the RFS to ensure compliance with the Guidelines are: 1. From the start of building works, and in perpetuity to ensure ongoing protection from the impact of bush fires, the property around any structures and associated buildings/infrastructure must be managed an inner protection area (IPA) for a distance of 10 metres. When establishing and maintaining an IPA the following requirements apply in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019: • Tree canopy cover should be less than 15% at maturity; • Trees at maturity should not touch or overhang the building; • Lower limbs should be removed up to a height of 2m above the ground; • Tree canopies should be separated by 2 to 5m; • Preference should be given to smooth barked and evergreen trees; • Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; • Shrubs should not be located under trees; • Shrubs should not form more than 10% ground cover; • Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation; • Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and • Leaves and vegetation debris should be removed. 2. Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure during bush fire emergencies. It should also be designed and maintained so that it will not serve as a bush fire risk to surrounding bush. 3. Access to the site shall comply with the provisions for Property Access Roads as detailed in section 7.4 of Planning for Bush Fire Protection 2019. 4. To allow for emergency service personnel to undertake property protection activities a perimeter road shall be provided surrounding the facility and shall comply with the following requirements in accordance with Planning for Bushfire Protection 2019; • Two-wheel drive, all-weather roads;

Agency / Organisation	Comment and Responses
	• The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded fire fighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating; • There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available; • Minimum 4m carriageway width; • In forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay; • A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; • Property access must provide a suitable turning area in accordance with Appendix 3 of PBP 2019; • Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; • The minimum distance between inner and outer curves is 6m; • The crossfall is not more than 10 degrees; and, • Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads. 5. The provision of water, electricity and gas services to comply with the following in accordance with Table 7.4a of Planning for Bush Fire Protection 2019: • A 20,000 litre static water supply must be provided on-site; • An outlet for fire fighting purposes is located within the IPA or non-hazard side and away from the structure, (5-20 metres); • 65mm Storz connection with a ball valve is fitted to the outlet; • The ball valve, pipes and tank penetration are adequate for the full 50mm inner diameter water flow through the Storz fitting and are constructed of a metal material; • Underground tanks have an access hole of 200mm to allow tankers to refill, direct from the tank; • A hardened ground surface for truck access is supplied within 4m of the water outlet or access hole; • above-ground tanks are manufactured from concrete or metal; • Raised tanks have their stands constructed from non-combustible material or bush - fire-resisting timber; • The bush fire-resisting timbers are Silvertop Ash, Blackbutt, Red or River Gum, Spotted Gum, Red Ironbark, Kwila (Merbau) or Turpentine; • Unobstructed access can be provided at all times; • Underground tanks are clearly marked; • Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; • All exposed water pipes external to the building are metal, including any fittings; • Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against

Agency / Organisation	Comment and Responses
	bush fire attack; any hose and reel for fire fighting connected to the pump shall be19mm internal diameter; and • Fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005; • A Static Water Supply (SWS) sign shall be obtained from the local NSW Rural Fire Service (RFS) and positioned for ease of identification by RFS personnel and other users of the SWS. In this regard: o Markers must be fixed in a suitable location so as to be highly visible; and o Markers should be positioned adjacent to the most appropriate access for the water supply. • Where practicable, electrical transmission lines are underground; • Where overhead, electrical transmission lines are proposed as follows: o Lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and o No part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines. • Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the • requirements of relevant authorities, and metal piping is used; • All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; • Connections to and from gas cylinders are metal; • Polymer-sheathed flexible gas supply lines are not used; and • Above-ground gas service pipes are metal, including and up to any outlets. A Bush Fire Emergency Management and Operations Plan shall be prepared for the site and shall identify all relevant risks and mitigation measures associated with the construction and operation of the solar farm. This should include: • Detailed measures to prevent or mitigate fires igniting; • Work that should not be carried out during total fire bans; • Availability of fire-suppression equipment, access and water; • Storage and maintenance of fuels and other flammable materials; • Notification of the local NSW Rural Fire Service fire control entire for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate; and • Appropriate bush fire emergency management planning. 7. A Bush Fire Management Plan (BFMP) shall be prepared in consultation with NSW RFS District Fire Control Centre. The

Agency / Organisation	Comment and Responses
	BFMP shall include: • 24/7 contact details including alternative telephone contact; • Site infrastructure plan; • Fire fighting water supply plan; • Site access and internal road plan; • Construction of asset protection zones and their continued maintenance; • Location of hazards (physical, chemical and electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations; • Such additional matters as required by the NSW RFS District Office (Plan review and update). **An appropriate condition has been included within the recommended conditions of consent (Schedule 1).**
Natural Resource Access Regulator (NRAR)	The development is exempt from requiring a water use, water management work or activity approval under Sections 89-91 of the NSW Water Management Act **Assessing Officer comment:** No issues

There are no outstanding issues arising from the advice of the agencies and organisations notified subject to the imposition of recommended conditions of consent.

4.2 Council Internal Referrals

The development application has been referred to Councils Director of Infrastructure for technical review and comment. He expressed a concern that Cockys Lane may not be adequate to cater for the associated traffic impacts. He has also requested that a Dilapidation Report be prepared and implemented for the development. The applicant has responded to these concerns and has proposed road improvements to manage potential impacts.

4.3 Community Consultation

The proposal was notified in accordance with the Council's Community Participation Plan from 31 May 2021 until 30 June 2021.

The notification included:

- An advertisement in the local newspaper *The Area News* on 2 and 23 June 2021
- A sign placed on the site;
- Notification letters sent to adjoining and adjacent properties. See Figure 3.
- Notification on the Council's website.
- Notification on Councils social media platform,

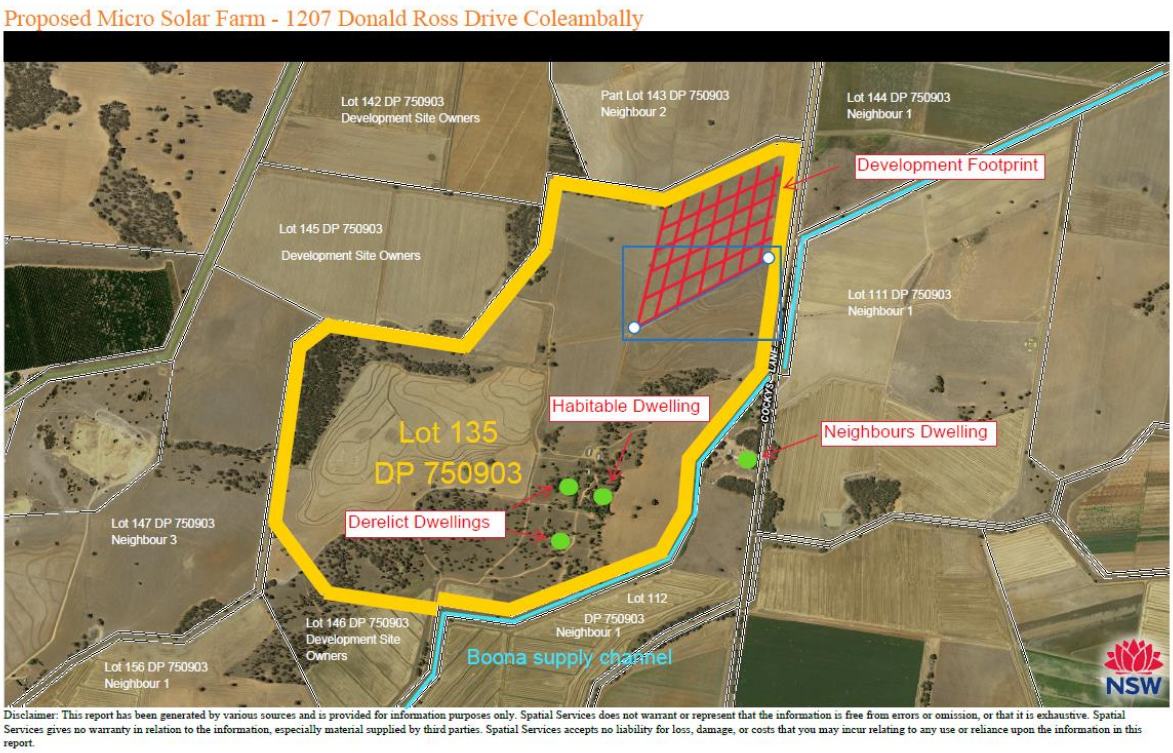

Figure 3. Neighbour Notification

The Council received three submissions from members of the public, one of which was an objection to the proposed development. The list of submitters is included in **Schedule 3.**

The matters raised in the public submissions are considered in TABLE 5 below.

TABLE 5

Public Submissions

Issue	Council Comments
Air Quality Impacts Heavy vehicles travelling along Cockys Lane will result in noise and dust impacts to the nearest Farm 2 residence. Multiple truck movements over a prolonged time create an unsuitable residential environment	**Applicant's response:** A range of mitigation measures will be employed to manage air quality impacts. These include: • Gravelling stretches of Cockys Lane to improve the road condition, including the frontage and 100m each side of the Farm 2 dwelling as well as 20m each side of the Boona channel bridge; • Extending the seal 20m up Cockys Lane at the Wallace Lane intersection to mitigate potential noise from the screwing of turning vehicles and degrading the road condition at the intersection; • Scheduling truck deliveries to the morning period where moisture is likely to be highest. • Using a water cart to reduce dust; • Perimeter landscaping to assist in the capture of particulates; • Vehicle speed restrictions including a 10km limit over the

Issue	Council Comments
	irrigation bridges; • Limiting the hours of operation to carry out noisy activities to daylight hours; • Implementing through a Dilapidation Report the baseline condition of roads being part of the transport routes- from the turn off at the Sturt Highway at Main Canal Road to the development site with regular monitoring and reinstatement of the road at the completion of construction; • Contact details for reporting; • Incorporating commitments within a CMP **Assessing Officer comment:** The nearest neighbouring dwelling is located 750m south of the development site and set back 25m from Cockys Lane. Cockys Lane is a narrow dirt road and there is the potential for the residents to be adversely affected by noise, vibration and dust from vehicles using the lane and in particular from trucks. However the dwelling is situated within a rural location where large agricultural machinery routinely use the local road regularly to access separated paddocks. The likely traffic impacts of noise, vibration and dust are not atypical for the rural locality and the predicted number of vehicle movements – both heavy and light are relatively low so any impacts are likely to be insignificant and not unreasonable. This is particularly so, given the relatively short duration of the construction period where most traffic movements will occur. The applicant has proposed a range of mitigation measures, mentioned above that are appropriate and reasonable in the circumstances. **Outcome:** This issue has been satisfactorily addressed and the proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Road Damage Potential damage to Cockys Lane due to increased traffic volumes and weights	**Applicant's response:** The proposed gravelling/sealing works proposed for Cockys Lane will reduce damage to the road and a CMP will be prepared and implemented during construction to manage impacts to the road and bridges as referred to above. **Assessing Officer comment:** A TIA has been prepared for the development which concluded that Cockys Lane is suitable to accommodate the nature and volume of vehicles required for the development. During the construction period there is predicted to be 20 daily light vehicle movements with six heavy vehicle movements, mostly rigid trucks over a three week time frame. It is considered that the condition of Cockys Road is adequate given the type and number of vehicles that are required to service the development and the improvement measures proposed by the developer. The measures proposed to be implemented are reasonable and issues have been resolved to the satisfaction of the neighbours.

Issue	Council Comments
	Outcome: This issue has been satisfactorily addressed and the proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Alternative access Alternative access to the development site should be from Donald Ross Drive instead of Cockys Lane.	**Applicant's response:** The most feasible access is considered to be from Cockys Lane not Donald Ross Drive although the delivery of the heaviest construction equipment will be from this alternative access. The developer also proposes that Cranes also will access the site from Donald Ross Drive which satisfies the requirements of Coleambally irrigation. **Assessing Officer comment:** The two viable transport routes for vehicles to access the site are either from the west on Sturt Highway via Donald Ross Drive or further east, closer to Narrandera via Main Canal and Wallace Roads. The other option via O' Neill Road, is not viable for heavy vehicles as the road has bridge constraints and its entire length is unsealed. The advantage of the Donald Ross Drive route to the alternative access is that it is completely sealed. However the route through the farm to the development site involves travel over 2.6km of internal farm tracks with the potential disruption to on- farm operations with an increased security and biosecurity risk. The other option via Main Canal Road, although less than 1km longer is a more direct route from where materials are sourced and uses the entire public road network over a shorter time period. The proposed transport route and the use of the public road system via Cockys Lane to access the development site is considered suitable. It should be noted that in response to neighbour concerns the applicant has indicated that five heavy vehicle deliveries and a crane will enter the site using the Donald Ross Access. Council will require both accesses to be constructed/upgraded in accordance with the design specifications approved as part of an application for a road opening permit under Section 138 of the Roads Act. **Outcome:** This issue has been satisfactorily addressed within the recommended conditions of consent (Schedule 1).
Traffic Route to avoid Wallace Lane The heavy vehicle transport route should be from the Sturt Highway via Donald Ross Drive and not from Wallace Road which is a narrow road	**Applicant's response:** During the planning stage of the project, it was identified that the most feasible transport route incorporated the use of Wallace Road. Other mitigation measures that have been proposed including vehicle speed restrictions, sealing a small section at the Cockys Lane/Wallace Road intersection and providing neighbours with information about truck movements and delivery schedules will reduce the potential environmental impacts. **Assessing Officer comment:** This issue is discussed above. The TIA concluded that the proposed route via Sturt Highway, Main Canal Road, Wallace Road and Cockys lane was a suitable route able to safely cater to the type and number of vehicles required to service the development both during and after construction. It also avoids using O'Neils Road which has

Issue	Council Comments
	limitations. The mitigation measures proposed by the developer will limit potential environmental impacts from vehicles using Wallace Lane. The selected transport route via Wallace Lane is considered both reasonable and acceptable **Outcome:** This issue has been satisfactorily addressed and the proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Spiny Burr Grass Spread Potential transport of Spiny Burr Grass by construction vehicle movements	**Applicant's response:** A CMP will be prepared and implemented which will provide for weed management including the prohibition of vehicles from parking or manoeuvring within the road reserve. Arrangements will be made with the Council to spray Spiny Burr Grass **Assessing Officer comment:** This matter has been discussed in **Section 3.6** under *Biosecurity***.** There is the potential for Spiny Burr Grass to establish in sandy environments within disturbed road sides. The seed has spread extensively in NSW through being transported on vehicle tyres and through the use of slashers and road graders. The proposed restriction of construction vehicles using the road sides would be a useful mitigation measure. The key to the effective control of Spiny Burr Grass is to prevent seeding and exhaust any reserves of seed in the soil. This can be achieved through integrating cultivation, herbicide application, increasing competition through good pasture establishment and management and cropping. Although the neighbouring owners raising the issue are satisfied with the applicants response, the CMP should require an integrated approach to the control and management of Spiny Burr Grass in accordance with NSW Department Primary Industries WeedWise " Control of Infestations on Roadsides" **Outcome**: This issue has been satisfactorily addressed and the proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Traffic and Safety Multiple truck movements over a prolonged period of time create safety issues. Truck speed and noise are potential hazards.	**Applicant's response:** A Construction Traffic Management Plan will be prepared and implemented which will limit the speed of construction vehicles along Cockys Lane. The developer also proposes to provide written correspondence to nearby landowners prior to the beginning of construction to detail the scheduled start and end date of truck movements and the total number of truck deliveries. Residents would again be notified of detailed delivery dates and number of trucks expected in each coming week, including details of the approximate expected truck movement times. This secondary update is proposed to be undertaken via email, letter or phone calls. **Assessing Officer comment:** There is the potential for increased vehicular and pedestrian conflict and risks to personal safety, particularly during the construction period. Given the construction period is of a short duration, estimated at 6 months,

Issue	Council Comments
	the measures proposed by the developer are reasonable to manage safety risks. **Outcome:** This issue has been satisfactorily addressed and the proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Impacts on amenity Multiple truck movements over a prolonged time affecting residential amenity	**Applicant's response:** Construction traffic movements will only occur during approved construction hours which are likely to be conditions by Council to be between the hours of 8:00am to 6:00pm Monday to Friday, and 8:00am to 1:00pm Saturday. Major material delivery is expected to be undertaken using around three trucks per day over a three week period. Given the limited amount of truck movements and the times between which these will be undertaken, it is considered that any impacts will be experienced over a relatively limited period of time. **Assessing Officer comment:** The truck movements proposed are considered low and the duration of construction is expected to be six months. The applicant has proposed a number of mitigation measures to reduce air quality and traffic-related impacts to lessen the nuisance to nearby residents. The locality where the development is proposed is within a rural environment where agricultural impacts routinely occur and are accepted as atypical. It is considered that the mitigation measures proposed by the applicant and mentioned elsewhere in this report are sufficient to minimise detrimental impacts on the residential amenity. **Outcome:** This issue has been satisfactorily addressed and proposed mitigation measures included within the recommended conditions of consent (Schedule 1).
Man Made Hazards Solar farms are dangerous, toxic and result in fire hazards	**Applicant's response:** Submission of a Technical Report 704062000620 dated 14/04/2020 to demonstrate the proposed photovoltaic modules meet test specifications for the intended use of PV modules for electricity generation systems with max voltage of 1500 V DC **Assessing Officer comment:** Risks to the environment from solar technologies are considered to be low. Materials used in the construction of solar modules have the potential to be recycled following the decommissioning of the site. All infrastructure will be removed from site reducing and risk to human health and/or the environment. **Outcome:** This issue has been satisfactorily addressed and proposed mitigation measures included within the recommended conditions of consent (Schedule 1).

5. KEY ISSUES

From this assessment, the key issues of concern that are presented by the development include:

a) The condition and capacity of Cockys Lane

b) The adverse environmental impacts on neighbours particularly air quality impacts

c) The hazards and risks associated with fire and bush fire

d) The loss of productive agricultural land

These issues are considered to be resolved because:

a) The environmental impacts will be mitigated to minimise impacts to neighbours and the environment;
b) The surface condition of Cockys Lane will be improved to adequately cater for the development and ultimately rehabilitated to not less than its current condition at the end of the development life;
c) The technology proposed is considered safe and commensurate with other similar solar farm and battery storage developments and the development will comply with the RFS *Planning for Bush Fire Protection* guidelines.
d) The development will be decommissioned and the site rehabilitated so it can be used for future agricultural production.

6. CONCLUSION

This development application has been considered in accordance with the requirements of the EP&A Act and the Regulations as outlined in this report. Following a thorough assessment of the relevant planning controls, issues raised in submissions and the key issues identified in this report, it is considered that the application can be supported.

7. RECOMMENDATION

That the Development Application DA No 10-2021(Panel Ref. PPSWES-88) for a 5MW solar farm and associated infrastructure at Lot 135 DP 750903 1207 Donald Ross Drive, Coleambally be APPROVED pursuant to Section 4.16(1)(a) of the *Environmental Planning and Assessment Act 1979* subject to the draft conditions of consent attached to this report in Schedule A.

The following attachments are provided:

- **SCHEDULE 1: Draft conditions of consent**
- **SCHEDULE 2: Plans and documents submitted with the DA**
- **SCHEDULE 3: List of Submitters**