PLANNING REPORT

Maffra Solar Farm

April 2023

Project Number: 22-151

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Acronyms and Abbreviations

AHD/elevation	Australian height datum/ground height above sea level
BESS	Battery Energy Storage System
BMO	Bushfire Management Overlay
BPA	Bushfire Prone Area
CFA	Country Fire Authority
DELWP	Department of Environment, Land, Water and Planning (VIC)
EMP	Environmental Management Plan
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cwth)
FZ	Farming Zone
ha	hectares
km	kilometres
LGA	local government area
m	metres
MWh	megawatt hour
P&E Act	*Planning and Environment Act 1987* (VIC)
PR	this Planning Report
PV	photovoltaic
proponent	BNRG Leeson
subject land	Lot 13 TP23981, Maffra-Briagolong Road, Maffra, 3860.
The proposal	Maffra Solar Farm
the proposal site	The development footprint within the subject land
the scheme	The Wellington Planning Scheme
TIA	traffic impact assessment
VIA	visual impact assessment

Executive summary

The Maffra Solar Farm (the proposal) is located north of the town of Maffra, Victoria (Figure 2-1). The subject land address is Maffra-Briagolong Road, Maffra 3860. The land is formally identified as Lot 13 TP23981. The land is approximately 3km north by road from the town of Maffra and 20km northwest of the City of Sale, Victoria within the Wellington Shire Council Local Government Area.

This Planning Report is seeking a planning permit for the use and development of the proposal including:

- A maximum 4.99 Megawatt (<5MW) solar energy facility within the Farming Zone (FZ) and Public Use Zone (PUZ):
    - Approximately 12 hectares (ha) of fenced solar array on tilt trackers would be installed within the array with a maximum tilt of 60 degrees (east to west) and resting angle of 0 degrees.
    - Inverter and switchstation.
    - Ancillary storage shed (equipment and spares storage) measuring 20m (l) x 14m (w) x 4.84m (h).

And additional works including:

- Utility (and Minor Utility) installation:
    - Powerline connection from the site invertors to the 22kV distribution system located within the proposal site.
    - And exempt minor utility installation, battery energy storage system (BESS) with a proposed output of a maximum 23MW hours (MWh).
- Road works:
    - Proposed site entry and emergency access off Maffra-Briagolong Road (Transport Zone, TRZ2).
- Native vegetation removal:
    - 3.697 hectares of native vegetation removal including 3 large trees, under the Detailed Assessment Pathway, within the development footprint and proposed road works as mapped within the Ecological Assessment for the proposal.

The proposal, see Figure 2-8, has been designed with an iterative approach and:

- Is consistent with the provisions of the Wellington Planning Scheme (the scheme), including, but not limited to Clauses:
    - 53.13 renewable energy facilities – The proposal has been designed to address site constraints and opportunities and avoid and minimises impacts.
    - 52.17 native vegetation – The proposal avoids and minimises impacts to native vegetation located in the subject land as much as practicably possible.
    - 13.02 bushfire planning – The proposal has been assessed for bushfire hazard and designed to address and minimise bushfire risk. Priority is given to the protection of human life.
    - 14.01-1S and 21.15 – The proposal addresses the potential for state, regional and local agricultural impacts, land capability, continuation of farming on the subject land, and compatibility of the proposal considering surrounding agricultural land uses.

The proposal has addressed other relevant site factors including preparation of specialist reports, the findings are summarised below:

- Ecology – The Ecological Assessment (NGH, 2022) shows the proposal has avoided and minimised impacts to native vegetation by designing the proposed layout with an iterative approach. Areas of higher value vegetation identified within the subject land have been avoided as much as practicable, however, the proposal would need to remove 3.697 ha of EVC 55 grassland and 3 large trees that requires offset. Further targeted surveys are required for one flora species prior to commencement and a fauna management plan would be prepared.
- Bushfire – A bushfire report has been completed to show compliance can be achieved with the CFA's *Design Guidelines and Model Requirements: Renewable Energy Facilities* (CFA, 2022) for the proposal. The Risk Management Plan (RMP) (FRC, 2022) considers the existing site conditions and associated risk indicators including the Bushfire Management Overlay that covers part of the proposal site. The RMP considers the proposal against Clause 13.02 of the scheme, includes a hazard analysis and fire risk analysis, and identifies fire avoidance and protection measures for managing onsite and surrounding risks. The RMP concluded that the proposal would not change the current expected bushfire behaviour in the landscape. The proposal can occur safely providing the requirements outlined within the RMP are implemented. Additional measures to protect life and property would include the preparation of a Fire Management Plan (FMP) and Emergency Management Plan (EMP) prior to construction.
- Traffic – A Traffic Impact Assessment (AMBER, 2022) has assessed the traffic impacts of the proposal. Access to the site would be provided via a new access point to Maffra-Briagolong Road, with the construction and operation access point at the northern end of the site and an emergency access towards the southern end. The site would generate up to 108 vehicle movements per day during peak construction times, including 38 truck movements. The road network and key intersections can accommodate the traffic generated and vehicle types that would need to access the site during the construction, operation, and decommissioning stages. To minimise the impacts of the development during construction a Traffic Management Plan would be prepared.
- Noise – An Acoustic Report (Renzo Tonin & Associates, 2022) was completed and considered a worst-case scenario and demonstrates compliance can be achieved with relevant EPA guidelines and standards and would be low risk with respect to operational and construction noise and vibration. The report found that there would be no likely noise exceedances of the relevant noise criteria:
    - EPA 1826 noise limits
    - Construction noise and vibration criteria

  A Construction Environmental Management Plan (CEMP) would be prepared and include recommendations from the Acoustic Report with respect to noise and vibration during the construction phase. With respect to operational noise the proposal can operate continuously and at full capacity without adverse acoustic impact on residential amenity.
- Visual – The Visual Impact Assessment (NGH, 2022) found that there are minimal to no potential views of the solar facility for near receivers due to the topography and existing vegetation within the site and along the roadsides. The proposal would result in minimal visual impacts. Measures committed to by the proponent in this PR relating to management

of traffic, control of light spill, dust minimisation, and design (materials and colours) would avoid and minimise any associated visual impacts.

- Glint and Glare – The Glint and Glare Assessment (MOIR L.A., 2022) includes a technical modelling analysis of potential impacts. The assessment concluded that without mitigation glare was found to be possible for dwellings and road users. A total of 17 free standing dwellings were identified within 1 km of the proposal site. Of the 17 non-involved dwellings assessed, none have potential to experience glare. 4 route receptors were identified as part of the assessment. Based on glare assessment only McCubbins Road might experience a very minimal amount of "Green" glare (glare that is not likely to form an after image). All other route receptors are not expected to experience any glare. These findings are based on the proposal siting and existing established vegetation around the site. No further screening would be required.
- Agriculture – The Agricultural Assessment (Meridian Agriculture, 2022) confirms the proposal:
    - Would not be located on high quality agricultural land, the soils are of low to moderate fertility with significant subsoil constraints that limit their ability to be highly productive.
    - Would have no effect on the ability of surrounding property owners' agricultural uses, nor would it impact on the agricultural sector in the wider region.
    - Would be a medium-term loss of part of the agricultural land of the site, but this would not prohibit grazing of cattle on the remainder of the subject land during operation of the proposal. Co-location of sheep grazing and solar panels could be investigated as part of options for vegetation management.
    - When the proposal is decommissioned, there would be no residual detrimental impact on the productivity of the site. Soil fertility would decline over time, but this can be corrected rapidly through the addition of suitable amendments.

The avoidance, minimisation and mitigation measures set out in this Planning Report, and supporting documents and proposal plans, have been committed to by the proponent. Prior to commencement of relevant stages, relevant Environment Management Plan (EMP) documents would be prepared. Impacts would be effectively managed through implementation of the EMP for the site. The proponent would submit the EMP to the DELWP prior to commencement of relevant stages. Sub plans would include:

- Fire and Emergency Management Plan.
- Landscape Plan.
- Landscape (Flora, Fauna, Weeds, Pest) Management Plan.
- Traffic Management Plan.
- Soil and Water Management Plan.
- Waste Minimisation and Management Plan.

The proposal:

- Has been designed in consideration of the Wellington Planning Scheme and the Solar Energy Facilities Design and Development Guidelines (DELWP, 2022).
- Would contribute to the achievement of the Victorian Government's renewable energy policies. The proposal estimated to generate 12,000MWh in the first year, the equivalent to

supplying over 1,500 households with renewable electricity. The BESS would also assist in delivery power during peak times to the network.

- Provides for diversification of economy, directly strengthening the resilience of the current agricultural business (existing farm) and the region generally, specifically considering the need for communities to adapt to climate change.

1. Introduction

1.1 Overview

This Planning Report (PR) has been prepared to support a planning permit seeking the Ministers approval of proposed <5MW AC solar energy facility and up to a 23MWh Battery Energy Storage System (BESS) at Maffra-Briagolong Road, Maffra 3860 (Lot 13 TP23981). This PR identifies and assesses the potential environmental and planning issues associated with the construction, operation, and decommissioning of the proposal. This PR has been prepared by NGH on behalf of the proponent BNRG Leeson (acting for BL Maffra Solar Nominees Pty Ltd as trustee for BL Maffra Solar Trust).

The proposal includes the installation of energy generating solar infrastructure including up to 12 hectares (ha) of single axis (tracking) solar array, inverters, transmission line connection, site entries (construction/operation and emergency), internal access, buffer areas, BESS and ancillary shed, all within an approximately 15 ha lease area.

The land is subject to the planning provisions of the Wellington Planning Scheme (the Scheme) and is located on land zoned Farming Zone (FZ). As outlined by the Decision Guidelines of the Scheme, this PR considers potential impacts of the proposal and specifically addresses construction and operational aspects such as social impacts (visual effect, glint and glare, noise, and land use compatibility), and environmental impacts (native vegetation, water, bushfire, and traffic). These matters have been addressed in section 5 of this PR and accompanying specialist studies and reports as listed in Table 2-2.

This PR should be read in conjunction with the accompanying plans and documentation as listed below.

Table 1-1: Accompanying Plans and Documentation

Appendix	Description	Prepared by
A	Proposal plans	BNRG Leeson
B	Certificate/s of title	Provided by BNRG Leeson
C	Ecology report	NGH Pty Ltd
D	Bushfire Assessment	Fire Risk Consultants
E	Agricultural Assessment	Meridian Agriculture
F	Traffic assessment	Amber
G	Visual Impact Assessment	NGH Pty Ltd
H	Glint and glare assessment	MOIR Landscape Architects
I	Noise assessment	Renzo Tonin & Associates

The structure and content of the PR addresses the Planning Scheme relevant to the proposal site and the Solar Energy Facilities Design and Development Guideline (DELWP, 2019).

2. The proposal and location

2.1 Locality and subject land

The proposal site is located on the Maffra-Briagolong Road, Maffra. The proposal site is located within Lot 13 TP23981, the subject land. The proposal includes works within the transmission easement on the subject land and within the road reserve of Maffra-Briagolong Road. The subject land is approximately 3km north by road from the town of Maffra and 20km northwest of the City of Sale, Victoria. Sale is the closest regional city to the subject land within the Wellington Shire Council Local Government Area (LGA). The LGA has a population of 43,500. The residents are spread over an area of 10,924 square kilometres (WSC, 2022). The ABS identifies the 2016 population of Maffra as 5280 (ABS, 2016).

The total area of the subject land is 53.7ha, approximately 12ha of the land forms the proposal site (the maximum lease area would be 15ha). Certificates of Title for the property are included at Appendix B.

The subject land is zoned Farming Zone (FZ). The subject land is agricultural land and in parts is an open grass paddock currently used for grazing, other areas are woodland and native plantation. The land is rectangular in shape and the proposal is located in the western portion of the land. Lot 3 TP964820 includes the Stratford Town Supply Channel, the channel splits the subject land and is zoned PUZ1, no works are proposed within this Lot. The subject land has a gentle slope to the south, banking down to the channel and up to hills in the southeast.

Primary production/agricultural grazing (open paddocks), native woodlands and native forestry dominate the land surrounding the proposal site. Agricultural properties typically have associated dwellings and as seen in Figure 2-2, the properties vary in size. Larger semirural residential lots are present to the southwest and west.

Other approved solar farms within the LGA include:

- Maffra Solar Farm (Brewers Hill Road), approximately 630m south from the proposal site, with a proposed capacity of 30MW.
- Perry Bridge Solar Farm, approximately 17km east from the proposal site, with a proposed capacity of 44MW.
- Fulham Solar Farm, approximately 19km south from the proposal site, with a proposed capacity of 80MW.

The West Sale Airport is located 17km to the south of the proposal site and the RAAF East Sale Aerodrome is located 20km to the southeast, refer to the location map at Figure 2-1.

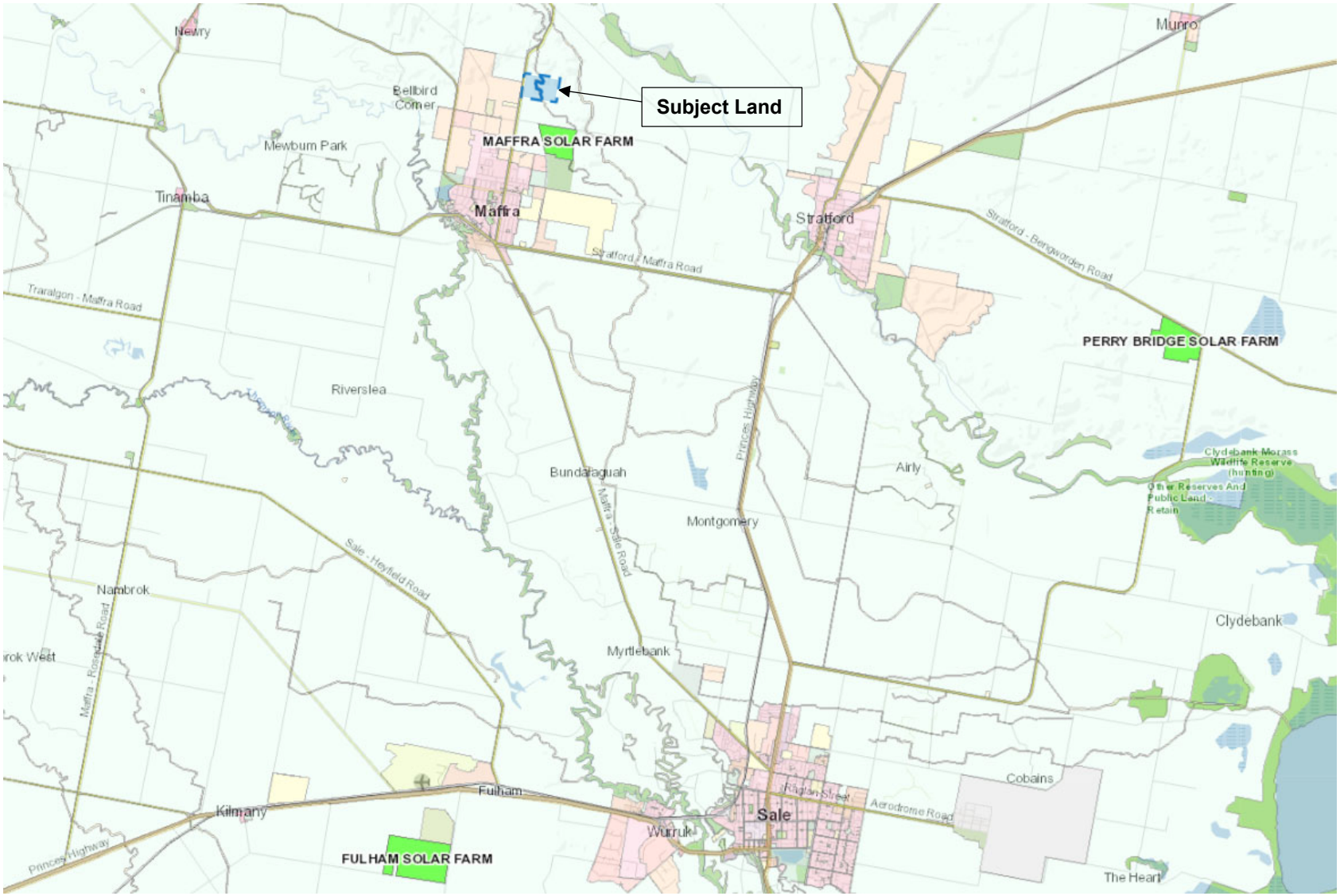


Figure 2-1 Location map showing the subject land and proximity to Sale and other regional features (Source: Adapted from Vic Plan (DELWP, 2022)

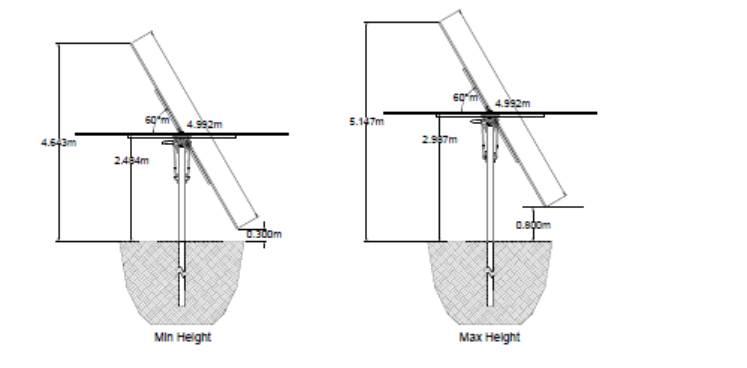
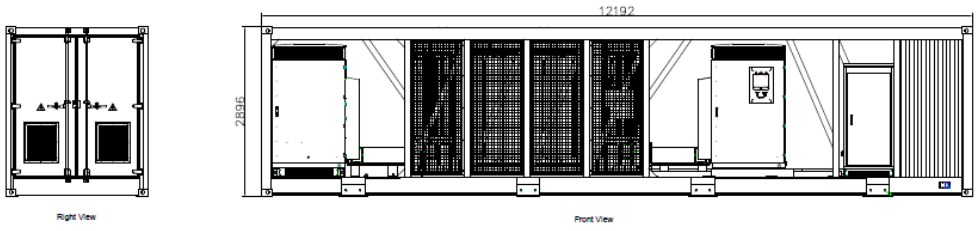
Figure 2-2 Proposal site – land use context (Source: VicPlan (DELWP, 2022)

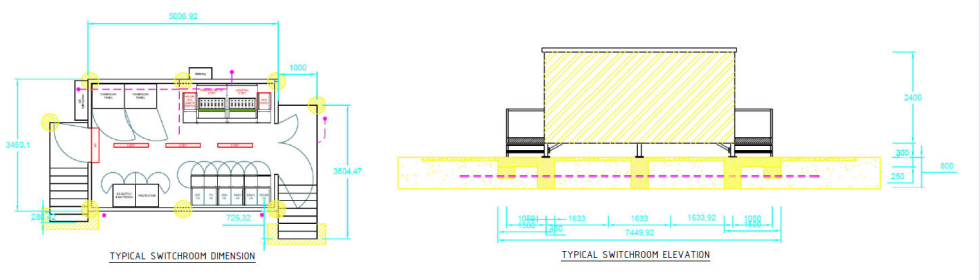
2.2 Proposal details

2.2.1 Solar infrastructure

The proposal involves the use and development of land for a solar energy facility, being the construction, operation, and decommissioning of ground-mounted photovoltaic (PV) solar array energy generating system, generating direct current (DC) power that would be converted to alternating current (AC) power, then transferred to the electricity network or stored for later transfer. A summary of the key solar infrastructure and associated works is included in Table 2-1.

Table 2-1 Key infrastructure and associated works of the proposal

Key feature	Description
Solar array	The proposal is <5MW (AC) solar facility (refer to Figure 2-8) comprising: • Approximately 12ha of fenced solar array, a maximum of 12,000 photovoltaic (PV) modules (e.g., Talesun 580W) on tilt trackers would be installed within the array with a maximum tilt of 60 degrees (east to west) and resting angle of 0 degrees. • Solar panel technology utilises semiconductor material designed to absorb and convert sunlight into electricity. The panels provide energy in the form of DC, which must be converted to AC via a solar inverter.  Figure 2-3 Typical array detail (module and tracker) (Source: BNRG, 2022)
Invertor	1 MV inverter (e.g., Sungrow SG4950HV) would be installed, the inverter incorporates smart operation and maintenance (O&M). The solar panel arrays would be connected to the inverter. The inverter would be approximately 12.2m (length) x 2.9m (width) x 2.4m (height) and would weigh approximately 27 tonne.  Figure 2-4 Typical inverter MV detail (Source BNRG, 2022)

Key feature	Description
Substation	The substation (utility installation) components would be on a non-combustible finished surface as required. The substation components would include: • MV Inverter/transformer. • Switchroom.  Figure 2-5 Typical Switchroom detail (BNRG, 2022) Overhead powerlines (utility installation) would connect the substation to the 22kV distribution lines located within the subject land (refer to Figure 2-8) for the Point of Interconnection (POI)). The powerline connection requires a permit for the use of land for a utility installation. Locations, numbers and spacing of power poles to connect to the power line within the road reserve will be determined through detailed design post planning approval, however, will be minimal, 1 or none. The existing timber poles typically have a maximum height of 12m. A distribution line will connect from the proposal switchroom to the existing distribution pole and line located within the road reserve. The height of any new pole required for interconnection would be a maximum of 12m and will be of wood, steel or spun concrete pole construction (not steel lattice) and located adjacent to the proposed switchroom.

2.2.2 Battery Energy Storage System (BESS) infrastructure details

The proposal includes the use of land for a minor utility installation being a Lithium-ion Battery Energy Storage System (BESS) with a capacity of approximately 5MW power output for 4 hours. *An exemption from a planning permit applies to the BESS as a land use listed in Clause 62.01 of the Scheme, being the use of land for a minor utility installation. The BESS is defined as a minor utility installation as a battery that will be connected to the 22kV distribution lines (less than 66kV) located within the subject land (refer to Figure 2-8).*

The BESS includes battery storage units (8 x 30ft containers) and an inverter (1 x 40ft container). The BESS would be located directly adjacent to the substation inverter and MV switchgear.

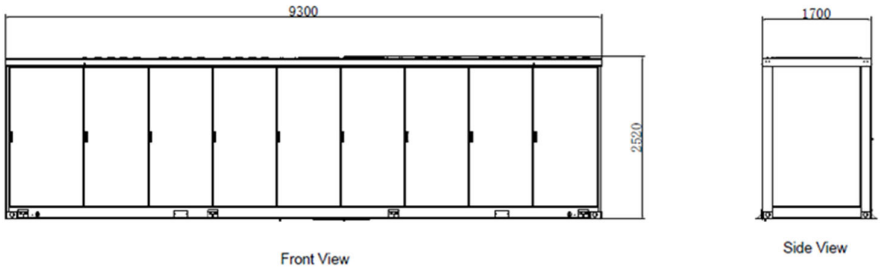


Figure 2-6 BESS typical unit (BNRG, 2022)

A BESS is a device that stores energy by accumulating energy through reversible electrochemical (lithium) reactions. The energy is stored/extracted in DC and converted/inverted into AC by an accompanying bi-directional inverter sized to the storage capacity. The medium voltage switch gear and auxiliaries would control the delivery of electricity to and from the substation and offsite power transmission infrastructure.

The BESS would store power to enable potential distribution to the network outside of sunlight hours, during the evening and morning peak times.

The BESS would operate for the life of the proposal (a minimum of 30 years). Maintenance and/or upgrades would not be expected to be needed until after a period of approximately 10-15 years.

Construction would involve:

- Construction of non-combustible surfaces such as concrete hardstands.
- Delivery of infrastructure components to the site.
- Assembly of the BESS containerised units (shipping container style) and associated infrastructure (substation connection, fencing, etc.).
    - Battery container units of either:
        - Lithium iron phosphate ('LFP').
        - Lithium Nickel Manganese Cobalt Oxide ('NMC').
        - Lithium Manganese Oxide ('LMO').

Each battery unit would be fully modular and self-contained. Each unit would also include:

- Battery storage cells.
- A range of battery, temperature, electrical and fire monitoring systems. These monitoring systems are integrated with automated and manual safety protection systems, and may include:
    - Internal temperature controls, Heating, Ventilation and Air Conditioning (HVAC).
    - Fire detection systems such as smoke detectors and heat sensors.
    - A range of electrical monitoring and alarm systems.
    - Telemetric reporting of sensor data to the onsite control room.
    - Telemetric reporting to offsite operations and maintenance facility.
    - Internal fire suppression agent.
    - Power shut down and disconnection.

BESS technology is established in the marketplace and is already required to comply with a range of Australian and international standards. The hazards associated with each type of battery chemistry technologies available are similar as they are all Li-ion-based technology.

2.2.3 Amenities and services

Temporary amenities would be located near the substation. The site is not proposed to be connected to Council sewerage mains. It is expected to be serviced by porta-loos, managed by the site operator. As there is no reticulated water to site, any water for use at the site would need to be brought on to the site. The static water supply for firefighting purposes would be located near the site entrance.

2.2.4 Associated infrastructure (security cameras, lighting, and fencing)

The whole site would be secured with appropriate fencing and lockable gates would be placed at the main entrance, providing restricted access. The fence would be maximum height of 2m, and a non-reflective colour and material that complements/blends with the vegetation on site and recedes into the background. Security lighting would be installed at the substation (BESS and inverter/transformer area) and would be directed away from dwellings and the road. CCTV would be installed on the site.

No landscape screening is proposed.

2.2.5 Site entry, parking and perimeter traversable fire break

Proposed site entry is off Maffra-Briagolong Road and would be designed based on a *AGRD Part 4 – Typical Design to Rural Properties* intersection. The intersection would be designed to the B-Double standard, see Figure 2-7.

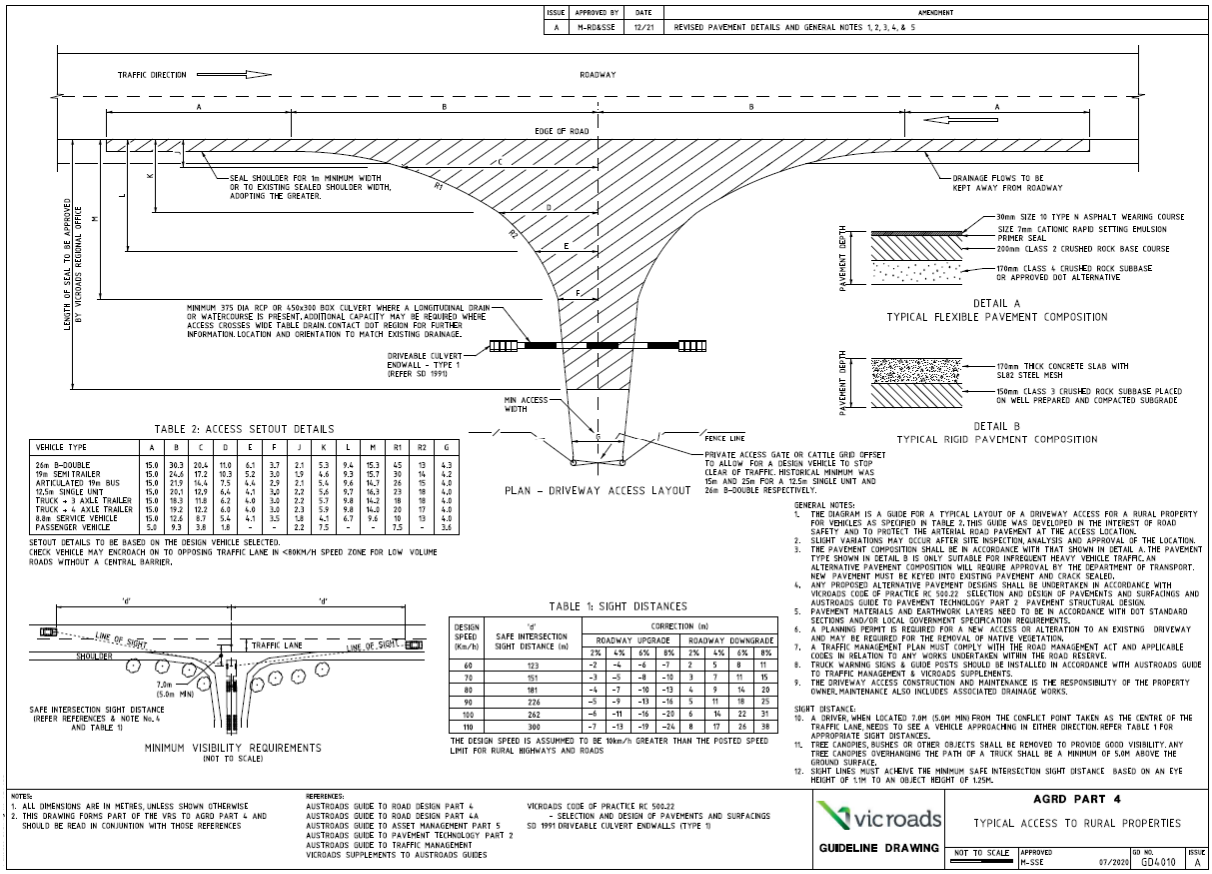


TABLE 2: ACCESS SETOUT DETAILS

VEHICLE TYPE	A	B	C	D	E	F	J	K	L	M	R1	R2	G
26m B-DOUBLE	15.0	30.3	20.4	11.0	6.1	3.7	2.1	5.3	9.4	15.3	45	13	4.3

Figure 2-7 Access (intersection) details and dimensions (AMBER (VicRoads), 2022)

Parking for operational staff would be informal parking within the fenced proposal site.

The site entry would connect with the proposed 10m wide traversable fire break that would be provided within the proposal site fenced area. The traversable area will provide access around the perimeter of the proposal site and would be suitable for emergency and maintenance access.

The 10m traversable fire break would be maintained throughout the construction and operation of the proposal. If required, water trucks would be used to suppress dust during construction, operation, and decommissioning. Additional stabilising techniques and/or environmentally acceptable dust control would also be applied where required to suppress dust.

Figure 2-8 Site Layout Plan for the proposal (Source: BNRG, 2022)

2.2.6 Proposal summary table

The primary characteristics of the proposal and subject land are summarised in Table 2-2.

Table 2-2 Breakdown of proposal elements (site features and construction, operation and decommissioning matters)

Proposal elements	Description
The proposal	Maffra Solar Farm.
Proponent	BNRG Renewables Ltd.
Capacity	4.99MW (<5MW) (AC) solar facility.
Subject land	Lot 13 TP 23981. (Maffra-Briagolong Road, Maffra 3860) Road reserve of Maffra-Briagolong Road
Proposal site area and maximum development footprint	Approximately 12ha of the subject land would form the proposal site. The proposal site is rectangular in shape and is in the west portion of the subject land.
Land zone	The subject land is zoned as Farming Zone (FZ) and Public Use Zone (PUZ1). Site entry establishment would require works in the road reserve zoned Transport Zone 2 (TRZ2).
Local Government	Wellington Shire Local Government Area.
Solar infrastructure	Approximately 12,000 PV modules (e.g., Talesun 580W) on tilt trackers. Inverter: MV inverter (e.g., Sungrow SG4950HV) would be installed including transformer/s and associated infrastructure. Switchroom measuring approximately 5m(l) by 3.4m(w) by 2.6m(h). Ancillary storage shed, measuring 20m (l) x 14m (w) x 4.84m (h).
Energy storage	Electricity storage capacity of up to 23MWh and comprising of lithium-ion batteries. Estimated battery size – 8x30ft containers. Each single battery container is approximately 26.4 tonnes.
Electricity Connection	The proposal would connect via overhead line to the existing powerlines located to the west of the site within the subject land.
Site access	The main site access for construction and operation be a new entry off Maffra-Briagolong Road and a secondary access for emergency use would be in the southwest of the proposal site using an existing farm gate location.
Perimeter road	Internal access would be provided within the 10m wide traversable fire break, consistent with bush fire protection and maintenance needs.

Proposal elements	Description
Construction hours	Standard daytime construction hours would be • 7.00am to 6.00pm Monday to Friday. • 9.00am to 1.00pm on Saturdays. Any construction outside of these standard construction hours, if required, would only be undertaken with prior approval from the relevant authorities, or unless in emergency circumstances e.g., to make work or the site safe.
Construction timing	Once the approval is received the proposal would take approximately 3 months to develop and a further 6 months to be constructed.
Workforce	Construction – up to 50 staff on site at any time during construction (peak times). Operation – up to 5 full time equivalent (FTE) staff.
Operation period	Anticipated to be a minimum of 30 years.
Decommissioning	When decommissioning occurs, all above ground infrastructure would be removed to a depth of approximately 300mm. The site would be rehabilitated consistent with land use requirements.

3. Construction, operation, decommissioning, and management plans

3.1 Construction Plan

The proposal would take an estimated 6 months to construct. Key stages of construction are listed below:

3.1.1 Stage 1 – Premobilisation/early works

Stage 1: Approximately 2 months – Site work/early construction works

- Pre-construction approvals with EMP.
- Order equipment.
- Land clearing (where possible to only the minimum extent necessary as detailed in the Ecological Assessment).
- Site preparation and services connection (if any, i.e., telecommunications).
- Fencing (boundary and construction as appropriate) including main gates and fire access gates.
- Planting of landscape zone (and establishment of relevant construction exclusion zones).
- Temporary site office.
- Temporary car park.
- Temporary laydown area.

The Site Context Plan, Site Layout, Elevations and Details Plans prepared by BNRG, show the site and surrounds, labelling of structures, location and details of the proposed infrastructure (refer to Appendix A). The Laydown area is denoted by yellow hatching on the Site Layout plan, refer to Figure 2-8, this area provides for any temporary site construction office, delivery and storage of materials during construction.

Construction and site operations would include regular maintenance and watering of the landscaped areas. Water for this purpose would be carted to site from a licenced operator or by another method approved the relevant determining authority.

3.1.2 Stage 2 – Construction

Stage 2: Approximately 4 months – Construction

- Delivery of PV modules, frames, electrical conduits, and balance of equipment.
- Footings.
- Fixing of modules.
- Positioning of junction boxes.
- Connecting of required cabling.
- Construction of substation (inverter/transformer, switchgear, and BESS).
- Construction of distribution line.
- Installation of associated works such as lighting and CCTV.

3.1.3 Grid connection and commissioning (pre-operation)

Grid connection/commissioning would occur approximately 2-3 months after construction, and would include the following:

- Grid connection and commissioning of plant.
- Completion certificate.

3.1.4 Hours of construction and staff numbers

Construction activities would take place during normal working daylight hours (7am to 6pm) Monday to Friday and 7am to 1pm on Saturday. Work outside of these hours would only occur in instances where:

- There is no noise disturbance to nearby neighbours/buildings.
- Delivery of materials is required outside of normal hours for safety reasons as requested by police or other authorities.
- There is a need for emergency work and/or necessary safety maintenance.

It is anticipated that there would be up to 50 staff on site at any time during construction (peak times). Workers would be housed off-site, as needed likely in the nearby city of Sale and surrounding towns. Buses would be arranged when needed to reduce traffic and minimise the need for temporary onsite parking.

3.1.5 Site access and haulage

Construction site access for the proposal is proposed from Maffra-Briagolong Road with the construction and operation (main) entry located in the northwest corner of the subject land. An emergency use access gate is located on the southwest of the proposal site, exiting into the subject land (as shown in Figure 2-8). The main entry would be used during construction and operation and would be suitable for all vehicles including heavy and oversized vehicles.

The proposed haulage route (proposed heavy vehicle traffic movements using M1/Princes Highway, Maffra-Rosedale Road, Traralgon-Maffra Road, Johnson Street, Powerscourt Street, and Maffra-Briagolong Road), and site entries are described in the Traffic Impact Assessment (AMBER, 2022) provided in Appendix F and summarised in Section 5.7.

3.1.6 Water requirements

Non-potable water requirements (generally to be used for dust suppression) are anticipated to be needed (based on visual cues) for the construction phase. Detailed water requirements would be determined by the construction contractors.

Water would likely be sourced from commercial water suppliers and trucked to site in water carts. Water sources for carting to site would be subject to determination by the proposal construction contractors.

There are no major earthworks anticipated for the proposal and as a result there would be no significant changes to the drainage regime of the site during construction and operation. The soil and stormwater management for the proposal would be designed and maintained in accordance with the Victorian Environment Protection Authority 2020 guidelines including:

- Publication 1894, Manage soil disturbance.

- Publication 1893, Use a treatment train (multiple control) approach.
- Publication 1895, Manage stockpiles.
- Publication 1897, Manage truck and other vehicle movement.
- publication 1896, Manage how you work within or adjacent to waterways.

A Soil and Water Management Plan would be included in the EMP for the proposal. The management plan would specifically address overland flow and sediment and erosion control.

Materials from construction would be refurbished, recycled, or disposed of offsite in accordance with Victorian environment protection waste management requirements.

Solid waste and putrescible waste disposal would be by the regular service of a licensed waste management contractor. Site storage of waste would be in approved waste containers provided by the contractor.

3.2 Operational Plan

The proposal is expected to operate for a minimum of 30 years. Solar farms generally require minimal regular maintenance. The majority of operations would be automated.

Ongoing work would include landscaping, maintenance, and security. The intention is to employ a full time equivalent (FTE) workforce of up to 5 people, noting for the proposal scale, it would likely be local contractors working intermittently during operation. On-site facilities would include a porta-loo and informal car park.

Operation and maintenance of the system would involve as needed replacement of modules, repair of inverters, trackers, and other supporting equipment, which would be expected to occur on a limited basis at certain points during the system's life cycle.

Once the facility is established, since ongoing work are minimal, the associated traffic during operations would generally be limited to light vehicles visiting the site.

There are a small number of lighting sources in the vicinity of the proposal, including from residential properties. Lights from vehicles travelling along the local roads provide dynamic and temporary sources of light.

Security lighting would be installed for night-time illumination, generally around the substation (inverter and switchgear) and BESS. Lighting would be low level and directional within the site to minimise the potential for light spill onto adjoining areas. In addition to the standard level of lighting required for normal security and safety, lighting may also be required for scheduled or emergency maintenance around the substation, BESS, and PV panel areas.

CCTV security cameras would potentially be located within and around the site, including at the entrance gate, substation, and BESS.

The proposal would have the capacity to generate electricity during day light hours. This would predominantly be during day and evening periods 7am-6pm and 6pm-10pm, respectively throughout the year and potentially part of the night-time period (prior to 7am) during the summer months. Batteries could potentially operate at any time, 24 hours a day, 7 days a week.

Bushfire management would be undertaken in accordance with the approved management plans. The management plans would be consistent with the approach set out in the *CFA's Design Guidelines and Model Requirements: Renewable Energy Facilities* (CFA, 2022) and any relevant Australian Standards and address the Risk Management Plan (FRC, 2022) as needed. The vegetation within the fenced proposal area would be maintained to reduce fuel loads, where

needed. Bushfire management would not result in impacts to vegetation on public land or road reserves.

Refurbishment may be required during operation:

- It is estimated that certain components of the solar equipment would have a life of a minimum of 30 years and the benefits of refurbishing the equipment would be considered closer to this time where the operational phase would extend beyond the minimum 30-year period.
- It is anticipated that the batteries that would be used in energy storage system would have a life of 10-15 years, and they would need to be replaced periodically during the operational phase for the proposal.

A Waste Minimisation and Management Plan would form part of the Environmental Management Plan (EMP) for the proposal to control waste and implement best practice reduce, reuse, recycle methods available, during construction and operation. The plan would be flexible to allow for use of emerging recycling and reuse technologies and services to avoid waste needing disposal at appropriately licenced landfill sites.

3.3 Decommissioning Plan

The intention is to operate the facility for a period of 30 years and if viable at the end of the 30-year period look at replacing plant to extend the life for a further 25-30 years. In the event the plant is decommissioned, the works would be managed in accordance with the EMP that would be developed for the proposal.

Decommissioning activities would include the removal and dismantling of all infrastructure on site. The land would be restored to 'make good' conditions e.g., removing infrastructure that would impact cropping activities and replacing removed fences. Key elements of decommissioning would include, but would not be limited to the following:

- The solar arrays would be removed, including the foundation posts. Materials would be sorted and packaged for removal from the site for recycling or reuse wherever possible.
- All site amenities and equipment would be removed including buildings, inverter stations, batteries and substation, and materials recycled or reused wherever possible.
- Posts and cabling installed within approximately 300mm of the ground surface would be removed and recycled.
- Fencing would be removed including small concrete footings.

The proposal would be dismantled. Components would be reused for other purposes with lower power demands and duty cycles, refurbished, recycled, or disposed of offsite in accordance with Victorian environment protection waste management requirements.

A Decommissioning EMP (DEMP) would be prepared in consultation with relevant agencies as needed and would incorporate a Decommissioning Waste Minimisation and Management Plan to facilitate the recycling and reuse of infrastructure components and materials. The DEMP would be prepared in accordance with relevant government guidance and reuse and recycle principles.

To avoid disposal of used materials/components, the DEMP may need include measures such as shipping used materials, not recyclable in Australia, to overseas sites for recycling and reuse. Items that cannot be recycled or reused would be disposed of at licenced facilities within Australia where appropriate.

A National approach is being considered by the government to address e-waste and specifically solar waste (Sustainability Victoria, 2021), the DEMP would be consistent with any National and Victorian approach developed and would be adaptable to utilise emerging technologies and processes as they evolve.

A DEMP with an indicative timeline would be prepared in consultation with relevant agencies and DELWP as required, prior to the commencement of decommissioning. A Traffic Management Plan would be prepared prior to decommissioning commencing. Traffic over the decommissioning period would be similar to the standard construction period.

3.4 Environmental Management Plans (EMP)

An EMP and relevant sub plans would be provided to DELWP for approval prior to construction commencing.

The EMP's would provide contingent requirements for ongoing environmental response planning to key issues. This approach allows planning and management techniques to be mindful of worst - case scenarios and representative impacts as response strategies are developed.

The EMP's would cover, the three key phases and EMP goals are:

- Construction – Minimising pollution, waste generation and other potential environmental impacts during construction stages of the proposal.
- Operations – Minimising potential environmental impacts during operational stages, managing site interface issues, and maintaining good neighbour relations.
- Decommissioning – Removal of site facilities. Minimising legacy issues and arrangements to make-good with any proposed decommissioning and rehabilitation.

The commitment to preparing the EMP's for the proposal is listed in Table 3-1.

Table 3-1 General safeguards and management measures

No.	Safeguards and management measures	C	O	D
G1	Prior to the commencement of each stage (construction, operation, and decommissioning) the EMP for that Stage would be prepared and submitted for approval from DELWP and/or relevant agencies. Each stage would fully implement relevant approved EMP.	**C**	**O**	**D**

4. Planning and policy provisions

4.1 Wellington Planning Scheme

The proposal is located within the Wellington LGA and is subject to the Wellington Planning Scheme (the scheme). Refer to Figure 2-1 for the location plan showing the proposal and LGA boundaries.

4.2 Land use permit triggers – permit required

- Farming Zone and Public Use Zone – use and development for a solar energy facility.
- Farming Zone and Public Use Zone – use and development for a utility installation.
- Farming Zone – A building which is within any of the following setbacks:
    - 100 metres from a waterway.
    - 100 metres from Transport Zone 2.
- Clause 52.17 Removal of native vegetation.
- Clause 52.05 Signs – display of business identification signage.
- Clause 52.29 Create or alter access to a road in a Transport Zone 2.
- Note 52.06 Car Parking – no permit trigger applies, however this application seeks the consent of the responsible authority as per 52.06-6.

4.3 Zone and overlay provisions

4.3.1 Clause 35.07 Farming zone

The subject land is within the Farming Zone (FZ) as shown in Figure 4-1. The purposes of the FZ are:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To encourage the retention of productive agricultural land.*
- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
- *To encourage the retention of employment and population to support rural communities.*
- *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*
- *To provide for the use and development of land for the specific purposes identified in a schedule to this zone.*

The proposal would be consistent with the relevant FZ purposes specifically, to ensure compatibility and minimise impacts on surrounding agricultural land during operation and post remediation. The proposal would create additional employment in the locality and support the landowner with additional income. The proposal includes measures and safeguards to protect the natural environment and systems.

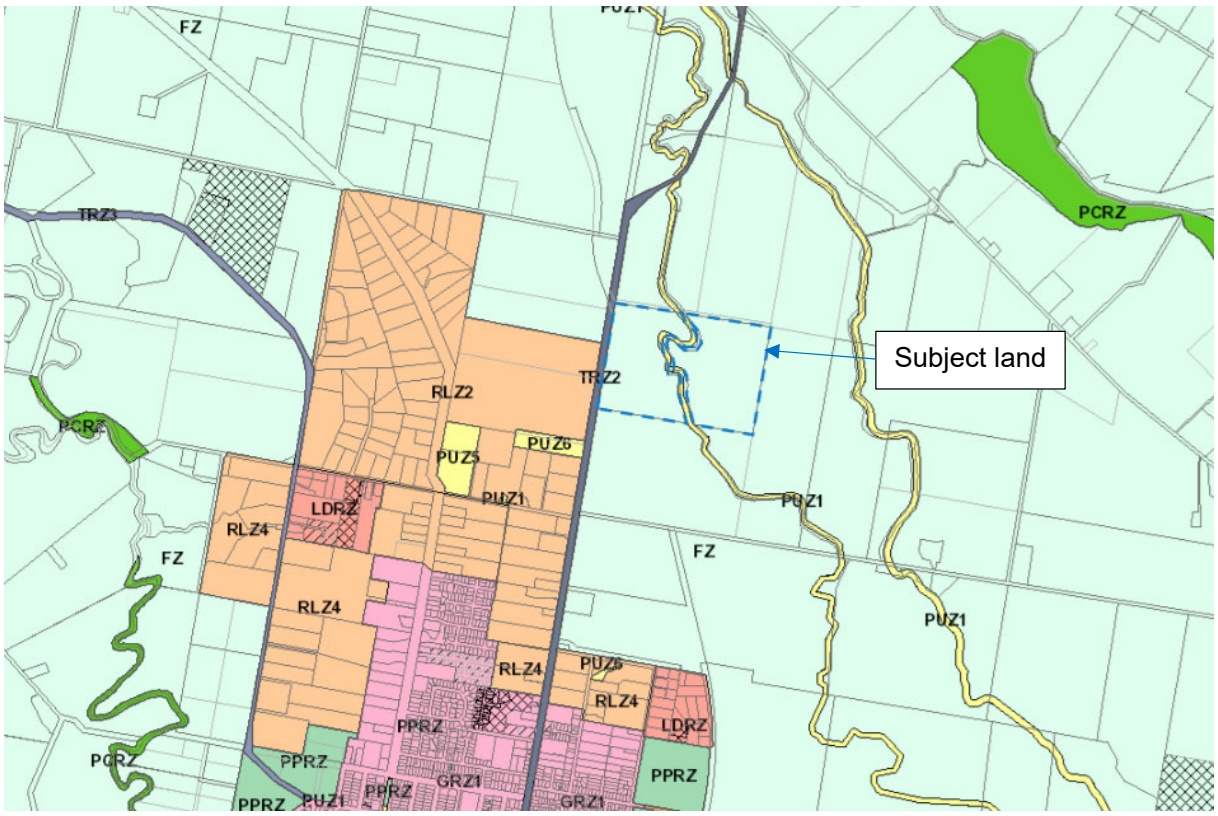


Figure 4-1 Zoning map (Source: VicPlan, 2022)

Proposed land use

The proposal would be defined as **a solar energy facility** and associated **utility installation**.

The proposal (solar infrastructure and associated works) would be a:

- **Solar energy facility** meaning *land used to generate electricity from solar energy using ground-mounted photovoltaic and thermal technology, where the primary role is to export power to the electricity network.*

The substation and overhead line connected to the electricity network would be a:

- **Utility installation** meaning land used: *a) for telecommunications; b) to transmit or distribute gas or oil; c) to transmit, distribute or store power; d) to collect, treat, transmit, store, or distribute water; or e) to collect, treat, or dispose of storm or flood water, sewage, or sullage. It includes any associated flow measurement device or a structure to gauge waterway flow.*

Under the FZ Table of uses, the proposal requires a planning permit and must meet Clause 53.13, refer to section 4.4.6 for discussion.

The BESS would be a:

- **Minor utility installation** meaning *land used for a utility installation comprising any of the following: a) sewerage or water mains; b) storm or flood water drains or retarding basins; c) flow measurement device or a structure to gauge waterway flow; d) siphons, water storage tanks, disinfection booster stations and channels; e) gas mains providing gas directly to consumers; f) a sewerage treatment plant, and any associated disposal works, required to serve a neighbourhood; g) a pumping station required to serve a neighbourhood; h) power*

> *lines designed to operate at less than 220,000 volts but excluding any power lines directly associated with an Energy generation facility or Geothermal energy extraction; i) an electrical sub-station designed to operate at no more than 66,000 volts but excluding any sub-station directly associated with an Energy generation facility or Geothermal energy extraction; or j) a battery connected to a section of the electricity distribution network operating with a nominal voltage not exceeding 66,000 volts.*

No planning permit is required for a minor utility installation in the Farming Zone. An exemption from a planning permit applies to the BESS as a land use listed in Clause 62.01 of the Scheme, being the use of land for a minor utility installation.

4.3.2 Clause 36.01 Public Use Zone (PUZ1)

The proposal site borders the public use (PUZ1) zone that follows the channel that splits the subject land. The public use zone has the purpose of recognising public land use for public utility and community services and facilities, and to provide for associated uses that are consistent with the intent of the public land reservation or purpose.

Alternative uses are permissible provided they are consistent with the purposes of the zone, including the Planning Policy Framework which seeks to facilitate renewable energy facilities in appropriate locations.

The proposal won't interfere with the water channel and the works have avoided the land zoned PUZ1. The proposal is consistent with the purpose of the PUZ as it will not interfere with the use of the adjoining parcel for public utility and community services and facilities. Note: the mapped PUZ does not align with the title boundaries of the adjoining lot containing the water channel, however is avoided as mapped.

4.3.3 Clause 44.06 Bushfire Management Overlay (BMO)

The subject land is subject to the Bushfire Management Overlay (BMO), refer to Figure 4-2. Clause 44.06-2 states the permit triggers for developments subject to a BMO. The proposal is not a development type listed and therefore this Clause does not apply to the proposal.

The CFA Guidelines, however, have been considered as part of this application. A bushfire risk assessment has also been prepared to confirm the proposal has been designed to reduce risk to life and property from bushfire to an acceptable level, refer to section 5.3 summarising the bushfire risk assessment and proposed commitments and full report at Appendix D.

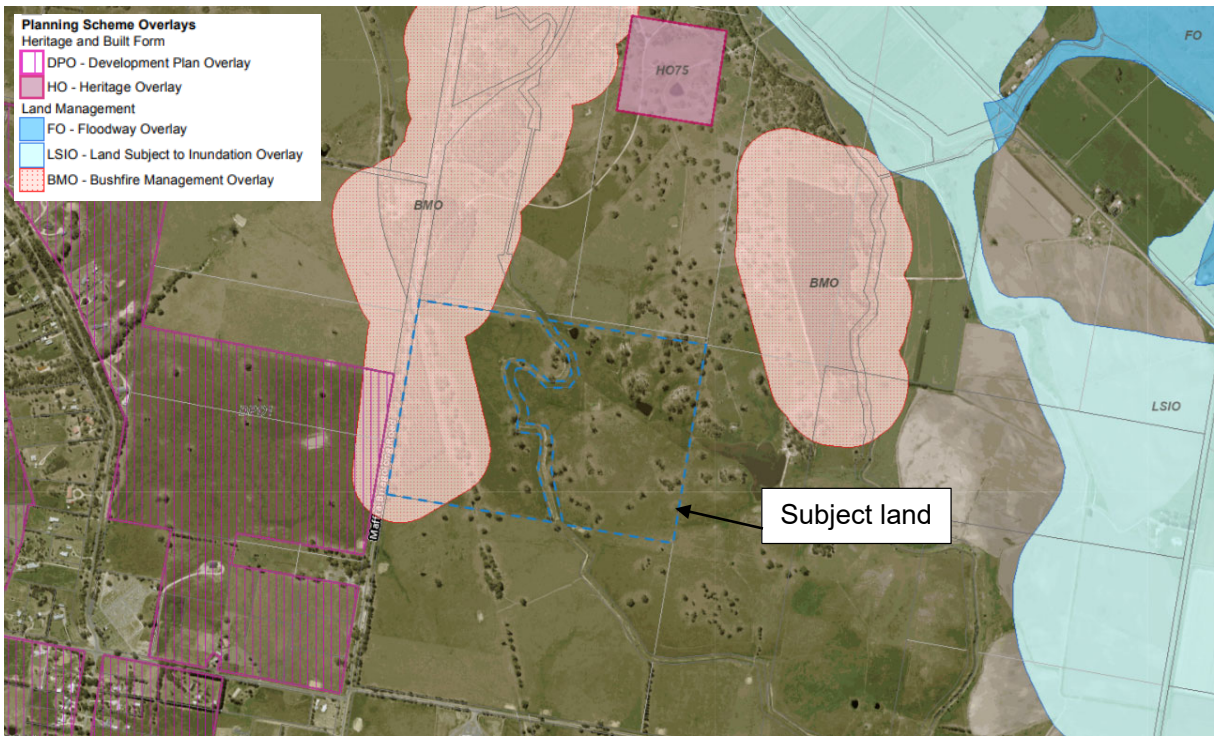


Figure 4-2 Overlays map (Source: VicPlan, SoV 2022)

4.4 Particular provisions

4.4.1 Clause 52.05 Signs

Minimal business identification and site safety and directional signage would be installed at the site entry. Signs would be of a small size similar to business/biosecurity type signs seen on farm gates to be compatible with the amenity and visual appearance of the rural area. Business identification signs would not exceed a maximum area of 3sqm. Typical signage details are included in the proposal plans set.

4.4.2 Clause 52.06 Car parking

Clause 52.06-6 Number of car parking spaces required for other uses

The proposal is not a use of land specified in Table 1 of Clause 52.06-6. The proposed informal parking within the fenced site area is considered suitable to cater to the low operational staff numbers (up to 5) and minimal onsite work during operation. No parking spaces would be marked out on site. Parking areas would be determined based on safe distances from electrical installations and managed by the site operator with details included in the operational EMP.

4.4.3 Clause 52.17 Native vegetation

The application includes an Ecology Report (NGH, 2022) prepared by NGH's qualified ecologists. The report describes the steps taken to avoid and minimise the removal of native vegetation. The report findings and proposed safeguards and mitigation measures are summarised in section 5.2 of this PR and provided in full at Appendix C.

4.4.4 Clause 52.29 Land adjacent to the Principal Road Network

The site access would be established within the TRZ2 zone, road reserve of Maffra-Briagolong Road. The proposal would also result in additional traffic on the Maffra-Briagolong Road during construction and operation. Site access and traffic generation are addressed in the Traffic Impact Assessment (AMBER, 2022). The report findings and proposed safeguards and mitigation measures are summarised in section 5.7 of this PR and provided in full at Appendix F.

4.4.5 Clause 53.02-4 Bushfire Protection Objectives

The subject land is identified as a bushfire prone area (BPA) and subject to the BMO, however Clause 53.02-4 and Clause 44.06 – Bushfire Management Overlay do not trigger a permit.

The CFA Guidelines have been considered as part of this application, refer to Section 4.7.2. Clause 13.02-1S Bushfire Planning has also been considered. Bushfire risk and proposed commitments to providing protection measures and preparing the required management plans for the site has been considered in section 5.3 of this PR and the Bushfire Risk Management Plan provided at Appendix D.

4.4.6 Clause 53.13 Renewable Energy Facility (Other Than Wind Energy Facility)

This PR and supporting documents include site and context analysis and design response. The application includes detailed plans and description of the proposal, visual and glint and glare analysis, an ecology report to address vegetation removal, rehabilitation information, measures to control potential amenity impacts including light spill, air quality (dust), noise, protection of heritage, traffic management of stormwater and agricultural impacts, electromagnetic fields, and heat island effect.

The proposal is consistent with Clause 53.13 as it is considered compatible with the use of the surrounding land for the purpose of agriculture and associated rural dwellings, and forestry. The proposal includes decommissioning and would make good the site and return the proposal site to a state suitable for agriculture. The proposal would provide additional income for the landowner supporting the continuation of agriculture on the surrounding land, providing an income buffer for when farming is difficult due to climate or requires an income boost to allow for change and investment in new approaches or technologies. The proposal location is in line with Victorian and local strategic directions.

4.5 Referral triggers

Agency	Likely Referral or Notice
DELWP Environment (Secretary to DELWP)	Recommending referral due to proposed removal of native vegetation under the Detailed Assessment Pathway at Clause 52.17 and 66.02-2.
Department of Transport	Determining referral authority for alteration of access to TZ2 under Clause 52.29 and 66.03.
Country Fire Authority	Notice, as a permit is not triggered by Clause 44.06.

4.6 Planning Policy Framework

This section outlines the policies of the scheme that are of relevance to this application.

This includes the Municipal Strategic Statement and Local Planning Policies that are to be integrated into a combined Planning Policy Framework consistent with all Victorian Planning Schemes. Accordingly, the policies are grouped thematically.

4.6.1 Municipal Strategic Statement (MSS)

Clause 21.01 describes the Wellington Shire's environmental and landscape values, environmental risks, natural resource management, built environment and heritage, economic development, transport, and infrastructure.

The environmental values are noted for the Planning Unit 2, Macalister area located centrally in the Shire, as being characterised by flat a landscape and is predominantly used for agriculture purposes as the land is suitable for gravity-fed irrigation and has high quality soils.

The proposal would not compromise the environmental and landscape values identified by the scheme including surrounding landowners using gravity-fed irrigation or similar. The proposal also addresses the environmental risks specifically bushfire, the agricultural suitability of the proposal, amenity impacts, economic matters linked to agriculture and traffic impacts and connections to services are also addressed.

Clause 21.02 and 21.03 of the MSS sets out the key issues and influences and vision of the Wellington Shire. The themes of the vision are discussed in the following sections of this PR.

4.6.2 Environmental and Landscape Values

The following Clauses focus on protecting ecological systems, biodiversity, and identified environments or landscapes.

Protection of biodiversity

Clause 12.01-S has the objective to assist the protection and conservation of Victoria's biodiversity.

Strategies:

- *Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.*
- *Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.*
- *Ensure that decision-making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*
    - *Cumulative impacts.*
    - *Fragmentation of habitat.*
    - *The spread of pest plants, animals and pathogens into natural ecosystems.*
- *Avoid impacts of land use and development on important areas of biodiversity.*

- *Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).*
- *Assist in the identification, protection and management of important areas of biodiversity.*

Clause 21.13-2 Biodiversity has relevant objectives which include:

- *To protect biodiversity, including important natural landscapes, endangered flora and fauna species and indigenous vegetation on public and private land.*
- *To retain native vegetation on private land, Crown land, declared water stream-side reserves and roadsides.*

The proposal addresses protection of biodiversity of the site, including avian fauna. Refer to the included Ecology Report (NGH, 2022), at Appendix C.

Native Vegetation Management

Clause 12.01-2S relates to native vegetation.

Objective:

- *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.*

Strategies:

- *Ensure decisions that involve, or would lead to, the removal, destruction or lopping of native vegetation, apply the three-step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017):*
    - *Avoid the removal, destruction or lopping of native vegetation.*
    - *Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
    - *Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.*

Clause 52.17 Native Vegetation regulates the removal of native vegetation. A permit is required under this provision to remove, destroy, or lop native vegetation, including dead vegetation.

The purposes of this Clause are:

- *To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation and to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):*
    - *Avoid the removal, destruction or lopping of native vegetation*

- *Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided*
- *Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*

The proposal is consistent with the environmental and landscape values and objectives and strategies of the scheme. The Ecology Report (NGH, 2022), refer to Appendix C included with this PR describes the biodiversity of the site and identifies measures to avoid and minimise potential impacts.

4.6.3 Environmental Risks and Amenity

These Clauses address environmental risks and amenity. The head provision of Clause 13 outlines the following policies:

- *Planning should strengthen the resilience and safety of communities by adopting a best practice environmental management and risk management approach.*
- *Planning should identify, prevent and minimise the risk of harm to the environment, human health, and amenity through:*
  - *Land use and development compatibility.*
  - *Effective controls to prevent or mitigate significant impacts.*
- *Planning should identify and manage the potential for the environment and environmental changes to impact on the economic, environmental or social wellbeing of society.*
- *Planning should ensure development and risk mitigation does not detrimentally interfere with important natural processes.*
- *Planning should prepare for and respond to the impacts of climate change.*

The proposal addressed matters relevant to climate change, for example through the production of renewable energy, consideration of environmental effects, waste minimisation and management, responsible management of the site, minimising water use, and addressing any increased fire risk and by enabling farm diversification in farming practices.

Natural hazards and climate change

Clause 13.01-1S relates to hazards and climate changes.

Objective:

- *To minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.*

Strategies:

- *Consider the risks associated with climate change in planning and management decision making processes.*
- *Identify at risk areas using the best available data and climate change science.*
- *Integrate strategic land use planning with emergency management decision making.*
- *Direct population growth and development to low risk locations.*

- *Develop adaptation response strategies for existing settlements in risk areas to accommodate change over time.*
- *Ensure planning controls allow for risk mitigation or risk adaptation strategies to be implemented.*
- *Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.*

Climate change presents several significant challenges including loss of biodiversity, increased fire risk, increased frequency of drought and high temperatures. The proposal has been designed to reduce greenhouse gas emissions, avoid, and minimise impacts to biodiversity and address potential hazards including bushfire risk.

The proposal would result in reduced greenhouse gas emissions, includes measures to reduce impacts to biodiversity and the required measures to manage bushfire risks.

Bushfire planning

Clause 13.02-1S applies to all land within a designated BMOBPA, therefore applies to the subject site. Bushfire risk is a consideration for any solar and battery proposal.

Objective:

- *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

Strategies:

- *The protection of human life is given priority through appropriate planning.*

In relation to bushfire hazard identification and assessment the Clause includes strategies to identify bushfire hazard and undertake appropriate risk assessment by:

- *Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.*
- *Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.*
- *Considering and assessing the bushfire hazard on the basis of:*
    - *Landscape conditions – meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of a site;*
    - *Local conditions – meaning conditions in the area within approximately 1 kilometre of a site;*
    - *Neighbourhood conditions – meaning conditions in the area within 400 metres of a site; and*
    - *The site for the development.*
- *Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*

Clause 21.14-2 describes the fire landscape types in the Wellington Shire - the proposal site forms part of the landscape defined as the Fire Landscape Type 5: Macalister Irrigation District. Fire in the area is generally to two types of fire landscapes linked to agricultural burning and grassland fire threat.

Objective:

- *To protect the community from natural hazards such as fire.*

Strategies:

- *Ensure that new land use or development, particularly within the identified fire landscapes does not increase the level of fire risk and includes adequate fire protection measures.*
- *Ensure appropriate buffers are applied between new urban settlement and bushland to mitigate the risk of fire.*
- *Require dwellings in rural areas to be sited to minimise fire risk and minimise the need for removal of native vegetation.*
- *Discourage residential development and associated uses in areas which are in areas that are subject to high fire risk.*
- *Recognise the five fire landscapes and their implication on land use and development and the risk of fire.*

The proposal includes measures to reduce risk and measures to manage bushfire and protect life and property, refer to the summary of measures included at section 5.3 and the bushfire Risk Management Plan is included at Appendix D.

Noise abatement

The objective of Clause 13.05-1S is to assist the control of noise effects on sensitive land uses.

The strategy is to ensure that development is not prejudiced, and community amenity is not reduced by noise emissions, using a range of building design, urban design, and land use separation techniques as appropriate to the land use functions and character of the area.

An Acoustic Report (Renzo Tonin & Associates, 2022) has been prepared for the proposal. The report findings and proposed safeguards and mitigation measures are summarised in section 5.6 of this PR and provided in full at Appendix I.

Land use compatibility

Clause 13.07-1S has the objective to protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.

Strategies:

- *Ensure that use or development of land is compatible with adjoining and nearby land uses.*
- *Avoid locating incompatible uses in areas that may be impacted by adverse off-site impacts from commercial, industrial, and other uses.*
- *Avoid or otherwise minimise adverse off-site impacts from commercial, industrial, and other uses through land use separation, siting, building design and operational measures.*

This PR addresses compatibility including potential amenity impacts and agricultural impacts for the proposal. Consideration of the setting including visual impacts are addressed in section 5.8 of this PR, and Appendix G. An Agricultural Assessment Report (Meridian Agriculture, 2022) has been prepared for the proposal. The report findings and proposed safeguards and mitigation measures are summarised in section 5.5 of this PR and provided in full at Appendix D.

Landscapes

Clause 12.05-2S has the objective to protect and enhance significant landscapes and open spaces that contribute to character, identity, and sustainable environments.

Strategies:

- *Recognise the natural landscape for its aesthetic value and as a fully functioning system.*
- *Ensure important natural features are protected and enhanced.*

This PR addresses the aesthetic values, natural systems, and features of the site. The proposal includes plans that show measures including provision of appropriate setbacks. Consideration of the visual impacts are addressed in section 5.8 of this PR, and Appendix G.

4.6.4 Agriculture

Clause 14.01-1S relates to the protection of agricultural land and includes the objective to protect the state's agricultural base by preserving productive farmland.

Relevant strategies include:

- *Identify areas of productive agricultural land, including land for primary production and intensive agriculture.*
- *Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.*
- *Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.*
- *Protect productive farmland that is of strategic significance in the local or regional context.*
- *Protect productive agricultural land from unplanned loss due to permanent changes in land use.*
- *Protect strategically important agricultural and primary production land from incompatible uses.*

In considering a proposal to use, subdivide or develop agricultural land, consider the:

- *Desirability and impacts of removing the land from primary production, given its agricultural productivity.*
- *Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.*
- *Compatibility between the proposed or likely development and the existing use of the surrounding land.*

- *The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.*
- *Land capability.*

Balance the potential off-site effects of a use or development proposal (such as degradation of soil or water quality and land salinisation) against the benefits of the proposal.

Clause 14.01-2S relates to sustainable agricultural land use. The relevant strategies include:

- *Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources.*
- *Support the development of innovative and sustainable approaches to agricultural and associated rural land use practices.*
- *Support adaptation of the agricultural sector to respond to the potential risks arising from climate change.*
- *Encourage diversification and value-adding of agriculture through effective agricultural production and processing, rural industry and farm-related retailing.*
- *Assist genuine farming enterprises to embrace opportunities and adjust flexibly to market changes.*
- *Support agricultural investment through the protection and enhancement of appropriate infrastructure.*
- *Facilitate ongoing productivity and investment in high value agriculture.*
- *Facilitate the establishment and expansion of cattle feedlots, pig farms, poultry farms and other intensive animal industries in a manner consistent with orderly and proper planning and protection of the environment.*
- *Ensure that the use and development of land for animal keeping or training is appropriately located and does not detrimentally impact the environment, the operation of surrounding land uses and the amenity of the surrounding area.*

Clause 21.15-2 addresses sustainable land management and has the objective of achieving ecologically sustainable management of rural land, particularly in relation to the agricultural, timber, and other industries that rely on the Shire's natural resources, and relevant strategy of limiting non-agricultural uses and subdivision on high quality agricultural land.

Clause 21.17-4 relates to agriculture, noting that it is a major industry within the Shire. The Wellington community benefits directly and indirectly from the ongoing prosperity of this important industry. Relevant objectives and strategies include:

Objective 1:

- *To support the contribution that agriculture and rural industries make to the regional economy.*

Strategies:

- *Ensure agricultural activity is based on the capability of land to support such use or development.*
- *Encourage agricultural activities such as horticulture and dairying in areas of high agricultural quality.*

Objective 2:

- *To discourage the use or development of high quality agricultural land that would be incompatible with sustainable agricultural use of the land.*
- *Ensure use and development adjacent to main roads in rural areas is related to agriculture.*

Clause 22.02-1 expands on policy relating to agriculture and applies to land in the Farming Zone. It notes that productive agricultural land, including the Macalister Irrigation District and the extensive dryland areas, is the cornerstone of the Shire's agricultural sector.

Infrastructure for access to water is crucial, as without irrigation water, much of the agricultural land within Wellington Shire has lower productivity.

Fragmentation and loss of productive agricultural land from production would diminish the value of the Shire's agricultural sector.

Clause 22.02-2 includes objectives:

- *To protect agriculture and agricultural land from inappropriate encroachment by urban and non-production based rural land use and settlement.*
- *To discourage the creation of small lots on farming properties.*
- *To encourage the consolidation of farm lots for more efficient agricultural production.*
- *To ensure that inappropriate small rural lot development does not occur in areas of environmental significance and sensitivity.*
- *To discourage subdivision which re-aligns boundaries, particularly in irrigated areas, for the purpose of creating small lots for housing purposes.*
- *To ensure that the infrastructure for getting water to agricultural land is not compromised.*
- *To discourage the use and development of agricultural land that would be incompatible with its sustainable use for ongoing agricultural production.*

The proposal is considered consistent with the relevant goals and objectives of Clause 21-15-2, 21.17-2 and 22.02 as the proposal would not be located on high quality agricultural land, is not within the mapped Irrigation district, and would not compromise farming on the subject land or the surrounding area. An Agricultural Assessment Report (Meridian Agriculture, 2022) has been prepared for the proposal. The report findings and proposed safeguards and mitigation measures are summarised in section 5.5 of this PR and provided in full at Appendix D.

Catchment planning and management

Clause 14.02-1S has the objective to assist the protection and restoration of catchments, water bodies, groundwater, and the marine environment.

Strategies:

- *Ensure that development at or near waterways provide for the protection and enhancement of the environmental qualities of waterways and their instream uses.*
- *Require appropriate measures to restrict sediment discharges from construction sites.*
- *Ensure planning is coordinated with the activities of catchment management authorities.*

The proposal avoids the water features on the site and the environmental qualities have been considered in the ecological report provided at Appendix C. Due to the minimal groundwork

required, and change of terrain, there are no likely impacts to the local catchment. A Soil and Water Management Plan would be prepared for the proposal prior to construction and would include necessary overland flow management and erosion and sediment controls.

Salinity and land degradation

Clause 21.14-4 relates to the potential for salinity and land degradation to create issues for the viability of agriculture as well impact the environment.

The relevant objective is to achieve integrated catchment management that addresses salinity, erosion, sedimentation, water quality, biodiversity, and native vegetation retention.

The relevant strategy is to locate and design activities such as abattoirs and intensive animal husbandry to minimise environmental damage and loss of amenity to surrounding areas considering matters such as effluent control, odour, noise, soil compaction, erosion, and protection of water quality.

The proposal avoids the water features on the site and there are no likely impacts to the local catchment. Management plans for the proposal would include relevant management measures addressing matters related to erosion, sedimentation, water quality, biodiversity, and native vegetation retention.

4.6.5 Built Environment and Heritage

Design for rural areas

Clause 15.01-6S includes the objective to ensure development respects valued areas of rural character.

Strategies:

- *Ensure that the siting, scale and appearance of development protects and enhances rural character.*
- *Protect the visual amenity of valued rural landscapes and character areas along township approaches and sensitive tourist routes by ensuring new development is sympathetically located.*
- *Site and design development to minimise visual impacts on surrounding natural scenery and landscape features including ridgelines, hill tops, waterways, lakes and wetlands.*

The proposal site was selected and chosen specifically as it enabled selection of a site that avoids and minimises potential adverse impacts as the priority. The proposal site specifically allows for a design respecting the rural setting and surrounding developments.

Energy resource efficiency

Clause 15.02-1S includes the objective to encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.

Relevant strategies are to improve efficiency in energy use through greater use of renewable energy technologies and other energy efficiency upgrades.

Heritage conservation

Clause 15.03-1S includes the objective to ensure the conservation of places of heritage significance.

The site is not mapped with a heritage overlay. The land to the north of the proposal site includes a heritage overlay identifying the dwelling. There would be no likely view from the dwelling site to the proposal site due to topography, therefore there is no likely impact on the heritage values or character of the identified item.

4.6.6 Economic Development

Clause 17.01-1S Diversified economy has the objective to strengthen and diversify the economy. This Clause seeks to provide for economic well-being.

Clause 21.17-2 includes relevant objectives and strategies to protect the economy of agriculture in the Wellington Shire. Refer to relevant considerations and discussion in section 4.6.4.

4.6.7 Infrastructure

Clause 19.01-1S Energy Supply

Objective:

- *To facilitate appropriate development of energy supply infrastructure.*

Strategies:

- *Support the development of energy generation, storage, transmission, and distribution infrastructure to transition to a low-carbon economy.*
- *Develop appropriate infrastructure to meet community demand for energy services.*
- *Ensure energy generation, storage, transmission and distribution infrastructure and projects are resilient to the impacts of climate change.*
- *Support energy infrastructure projects in locations that minimise land use conflicts and that take advantage of existing resources and infrastructure networks.*
- *Facilitate energy infrastructure projects that help diversify local economies and improve sustainability and social outcomes.*

Clause 19.01-2S Renewable Energy

Objective:

- *To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.*

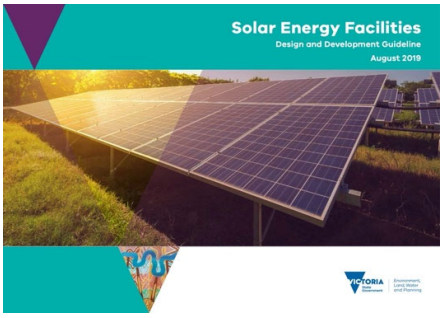
Strategies:

- *Facilitate renewable energy development in appropriate locations.*
- *Protect energy infrastructure against competing and incompatible uses.*
- *Develop appropriate infrastructure to meet community demand for energy services.*
- *Set aside suitable land for future energy infrastructure.*
- *Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.*

The proposal is for a renewable energy facility. The location has been selected as it allows for design that avoids and minimises impacts. The proposal is considered compatible with surrounding land uses.

4.7 Other policies and guidelines

4.7.1 Solar Energy Facilities – Design and Development Guideline (DELWP 2022)



The Victorian Government has developed the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022) aiming to help outline the assessment and development process for large-scale solar energy facilities in Victoria.

This guideline provides:

1. *Information for solar farm developers (proponents), the community, regulators and decision-makers (responsible authorities) relating to the Planning and Environment Act 1987 (the P&E Act) and the Victoria Planning Provisions.*
2. *Information and direction about the policy, legislative and statutory planning requirements*
3. *Relating to the siting and design of solar energy facilities.*
4. *An overview of best-practice advice relating to each stage of the site selection, design, construction, operation and decommissioning continuum.*

The document outlines what solar facilities are, how to identify suitable locations, best practice for proponents, and information and considerations for applying for a planning permit.

The Guidelines require a site analysis and design response to be prepared. There are detailed matters that are required as part of the design response as follows:

1. *Detailed plans and elevations of the proposed development including the layout and height of the facility and associated building and works, and their materials, reflectivity, colour, lighting and landscaping*
2. *Detailed plans and elevations of the proposed transmission infrastructure and electricity utility works required to connect the facility to the electricity network, access roads and parking areas*
3. *Accurate visual simulations illustrating the development in the context of the surrounding*
4. *Area and from key public viewpoints*
5. *The extent and assessment of any vegetation removal*
6. *A rehabilitation plan for the site.*

The design response should also include one or more written reports and assessments including:

1. *A description of the proposal including the types of process to be utilised, materials to be stored and the treatment of waste.*
2. *An explanation of how the proposed design derives from and responds to the site analysis including cumulative impacts with any other existing and proposed renewable energy facilities in the surrounding area.*
3. *An explanation of agricultural values and production including irrigation infrastructure impacts and whether any land is productive farmland of strategic significance.*

4. *Whether a works approval or licence is required from EPA Victoria or another authority administering the regulatory requirements of the Dangerous Goods Act 1985.*
5. *A description of how the proposal responds to any significant landscape features for the area identified in the planning scheme.*

An assessment of:

1. *The potential amenity impacts (such as noise; glint or glare; light spill; emissions to air, land or water; vibration; smell and electromagnetic interference): an assessment of potential noise impacts should have regard to EPA Victoria's Noise from industry in regional Victoria guidelines.*
2. *The effects of traffic to be generated on roads.*
3. *The visual impact of the proposal on the surrounding landscape.*
4. *The visual impact on abutting land that is described in a schedule to the National Parks Act 1975 and Ramsar wetlands and coastal areas.*
5. *The impact of the proposal on any species (including birds and bats) listed under the Flora and Fauna Guarantee Act 1988 or the Environment Protection and Biodiversity Conservation Act 1999.*
6. *The impacts on Aboriginal or non-Aboriginal cultural heritage.*

The Guideline also gives further detail around the decision guidelines of Clause 53.13 Renewable Energy Facility as follows:

1. *The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.*
2. *Whether the impact is acceptable of can be managed in accordance with relevant Australian and New Zealand standards or other regulatory requirements.*
3. *If the assessment was undertaken by a suitably qualified person.*
4. *The spatial extent, length and duration of the impact and whether it is for a limited or extended period.*
5. *Whether the impact can be mitigated via an appropriate built form, landscaping or other management response.*

The impact on significant views including visual corridors and sightlines:

1. *The amount of change proposed by works including earthworks, and the sensitivity of the landscape features to that change.*
2. *The visibility of the solar energy facility from vantage points accessible to the public and the ability to screen areas of development from view.*
3. *The locations and distances from which a solar energy facility can be viewed from a sensitive land use.*
4. *The significance of the landscape as described in the planning scheme including in an overlay, a relevant strategic study or by landscape features referenced in the planning scheme.*
5. *Landscape values associated with nearby land such as specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres.*

The impact of the proposal on strategically important agricultural land, particularly within a declared irrigation district:

1. *The impact on (including numbers of) irrigators downstream of the proposed site that depend on the ongoing operation of irrigation assets traversing the site.*
2. *The usage level of water compared to the actual capacity of the irrigation infrastructure servicing the site, based on rural water corporation mapping.*
3. *Whether or not the irrigation infrastructure servicing the site has benefitted from commonwealth or state government investment in infrastructure modernisation.*
4. *Whether the proposed site is connected to the modernised irrigation infrastructure and is integral to the rural water corporation's current and/or future planning for the viability of the irrigation district.*
5. *Whether or not the overall change in land use at the site aligns with a rural water corporation's asset management planning strategy for the viability of the irrigation district.*
6. *Whether the change in land use closes off any future opportunities for a rural water corporation to make irrigation footprint adjustments identified under a plan or strategy.*

The impact of the proposal on the natural environment and natural systems:

1. *How any onsite earthworks, buildings or other works will alter the natural processes occurring on land.*
2. *Whether the removal, lopping or destroying of any vegetation can be avoided or minimised through alternative design arrangements.*
3. *Proximity to natural and man-made water courses and the establishment of appropriate setbacks from these to maintain habitat and natural processes.*
4. *Impacts on landscape values associated with nearby public land described in a schedule to the National Parks Act 1975 or with Ramsar wetlands.*
5. *How bushfire and flood management measures will be dealt with to the satisfaction of the relevant referral authorities.*

The impact of a proposal on the local road network:

1. *Whether access to and from the site meets requirements established by the relevant road management authority*
2. *The impact of traffic movements to and from the site with the road network operating normally*
3. *The impact of traffic movements causing wear and tear on the road network.*

This Planning Report and included supporting documents demonstrate that the general considerations of Solar Energy Facilities – Design and Development Guideline (DELWP, 2022) and the provisions of Clause 53.13 have been addressed. The potential impacts to views, agricultural land, natural environment and systems and the local road network have been avoided and minimised.

4.7.2 Design Guidelines and Model Requirements: Renewable Energy Facilities (CFA Guidelines) (March 2022)

The purpose of these guidelines is to provide details about standard measures and processes in relation to fire safety, risk and emergency management that should be considered when designing, constructing, and operating new renewable energy facilities, and upgrading existing facilities.

Renewable energy facilities that support the generation of electricity in Victoria include solar farms, and battery storage facilities, which are the focus of this guideline.

There are certain access requirements some of which include:

1. *Adequate access to and within the facility will assist CFA in responding to and managing fires on-site. To enable access for fire vehicles, CFA requires that the following provisions be considered:*
2. *3.1.1 A four (4) metre perimeter road should be constructed within the ten (10) metre perimeter fire break.*
3. *3.1.2 Roads are to be of all-weather construction and capable of accommodating a vehicle of 15 tonnes.*
4. *3.1.3 Constructed roads should be a minimum of four (4) metres in trafficable width with a four (4) metre vertical clearance for the width of the formed road surface.*

Specific guidelines for solar energy facilities include:

1. *6.1.1 Solar facilities are to have a 6 metre separation between solar panel banks/rows.*
2. *6.2.1 Solar farm operators must provide specifications for safe operating conditions for temperature and the safety issues related to electricity generation, including isolation and shut-down procedures, if solar panels are involved in fire. This information must be provided within the content of the emergency information book.*
3. *6.3.1 Solar arrays are to have grass vegetation maintained to 100mm under the array installation or mineral earth or non-combustible mulch such as stone.*
4. *6.3.2 Where practicable, solar energy installations can be sited on grazed paddocks. In this case, vegetation is to be managed as per the requirements of this guideline, or as informed through a risk management process.*

The subject site is within a Bushfire Management Overlay (BMO) and BPA. The Risk Management Plan (FRC, 2022), refer to Appendix D, has considered the proposal against the requirements of the CFA Guidelines (CFA, 2022). The design of the proposal has included inclusion of the provisions and dimensions set out in the CFA Guidelines required for access, a 10m wide traversable fire break, and BESS locations.

Recommendations for fuel management would be contained in any Fire Management Plan that would be prepared. Fuel Management would include considerations of vegetation management during the Fire Danger Period and would comply with the vegetation management provisions set out in the Ecological Assessment (NGH, 2022).

An Emergency Management Plan would also be prepared.

4.8 Legislation

4.8.1 Planning and Environment Act 1987 (Vic)

The purpose of the Planning and Environment Act is to establish a framework for planning the use, development, and protection of land in Victoria in the present and long-term interests of all Victorians.

The Planning and Environment Act 1987 objectives are:

(a) To provide for the fair, orderly, economic and sustainable use, and development of land.

(b) To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity.

(c) *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.*

(d) *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.*

(e) *To protect public utilities and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community.*

(f) *To facilitate development in accordance with the objectives set out in paragraphs (a), (b), (c), (d) and (e).*

(g) *To balance the present and future interests of all Victorians.*

The Act gives effect to the planning schemes that apply to the proposal. The P&E Act also includes provisions for planning permits, developer contributions, etc that would guide the process for determination of the proposal.

This planning permit application complies with Part 4, section 47 of the P&E Act and section 13 of the Planning and Environment Regulations 2015.

The matters set out in s. 60(1) and (1A) of the P&E Act and relevant provisions of the planning scheme have been considered where possible in this PR.

4.8.2 Environment Protection Act 2017 (Vic)

The *Environment Protection Act 2017* and the *Environment Protection Amendment Act 2018* (which replaced the *Environment Protection Act 1970* on 1 July 2021) establish the legislative framework for protecting the environment in Victoria from pollution and waste. The proposal is being developed under the provisions of the new *Environment Protection Amendment Act 2018*.

In contrast to the *Environment Protection Act 1970*, which focused on managing pollution and waste impacts after they occurred, the new *Environment Protection Amendment Act 2018* seeks to prevent these impacts from occurring. At the centre of this act is the 'general environmental duty', which requires any person in Victoria (businesses, industry, and the community) engaging in an activity that may risk harming human health and the environment from pollution and waste to minimise those risks, so far as reasonably practicable. This can be achieved by implementing appropriate controls that are proportionate to the risk (i.e., the greater the risk of potential harm, the greater the management expectation).

4.8.3 Environment Protection and Biodiversity Conservation Act 1999 (Aus)

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protects matters of National Environmental Significance. The objectives of the EPBC Act are as follows:

- *To provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;*
- *To promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;*
- *To promote the conservation of biodiversity;*
- *To provide for the protection and conservation of heritage;*
- *To promote a cooperative approach to the protection and management of the environment involving governments, the community, landholders and Indigenous peoples;*

- *To assist in the cooperative implementation of Australia's international environmental responsibilities;*
- *To recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
- *To promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.*

An EPBC referral is not required for the proposal.

4.8.4 Flora and Fauna Guarantee Act 1988 (Vic)

Victoria's *Flora and Fauna Guarantee Act 1988* (FFG Act) provides a framework for biodiversity conservation in Victoria. The FFG Act provides for the listing of threatened species, communities of flora and fauna and potentially threatening processes. A number of non-threatened flora species are also protected under the Act.

A permit is required to remove species protected under the Act from public land and may also be required to remove protected species from private land in certain circumstances.

4.8.5 Climate Change Act 2017 (Vic)

The *Climate Change Act 2017* commenced operation on 1 November 2017 and seeks, among other purposes, to set a long-term greenhouse gas emissions reduction target and to provide the setting for five-yearly interim reduction targets to reach the long-term target. Section 6 states that for the purposes of the Act, "the long-term emissions reduction target for the State is an amount of net zero greenhouse gas emissions by the year 2050".

Section 20 states:

- *The Government of Victoria will endeavour to ensure that any decision made by the Government and any policy, program or process developed or implemented by the Government appropriately takes account of climate change if it is relevant by having regard to the policy objectives and the guiding principles.*

4.8.6 Renewable Energy Target (RET) Legislation

The Australian RET includes legislated targets which would require significant investment in new renewable energy generation capacity in coming years. Reducing Australia's emissions by 43% by 2030, in line with Australia's proposed target under the Paris Agreement, moving to a National outcome of net zero by 2050. The Victorian Government has launched a second Victorian Renewable Energy Target to help meet its commitment of sourcing 100% renewable electricity for all Victorian Government operations by 2025. The proposed renewable facility would produce clean energy and offset approximately 9993 tonnes of carbon emissions per year.

4.8.7 Aboriginal Heritage Act 2006 (Vic)

In Victoria, Aboriginal cultural heritage is primarily protected by the *Aboriginal Heritage Act 2006* and the Aboriginal Heritage Regulations 2018. Aboriginal cultural heritage is protected by requiring planning permit applicants to prepare Cultural Heritage Management Plans (CHMP) if and when their proposed actions pose a risk to Aboriginal cultural heritage. Under the Aboriginal Heritage Act, actions are considered to pose a risk to Aboriginal cultural heritage, and therefore require the

preparation of a mandatory CHMP, when they are both a “high impact activity” and occur in an “area of cultural heritage sensitivity”. No part of the activity is in an area of cultural heritage sensitivity therefore a mandatory CHMP is not required.

4.8.8 Dangerous Goods Act 1985 (WorkSafe Victoria considerations)

The objects of the *Dangerous Goods Act 1985* relevant to the proposal are:

- *To promote the safety of persons and property in relation to the manufacture, storage, transport, transfer, sale and use of dangerous goods and the import of explosives into Victoria*
- *To ensure that adequate precautions are taken against certain fires, explosions, leakages and spillages of dangerous goods and that when they occur they are reported to the emergency services and the inspectors without delay*
- *To ensure that information relating to dangerous goods is provided by occupiers and owners of premises to the relevant authorities*
- *To allocate responsibilities to occupiers and owners of premises to ensure that the health and safety of workers and the general public is protected*
- *To provide for licensing of persons required by the regulations to hold a licence in relation to dangerous goods*
- *To provide for the implementation of the ADG Code*
- *To provide for the management of risks arising out of security concerns associated with explosives and high consequence dangerous goods.*

The proposal includes a BESS. Batteries are a potential dangerous good and have associated fire risk in transportation and storage on site and require specific management. The proposed BESS includes the installation of 8 x 30-foot shipping container style, lithium-ion batteries on site near the site entry. The project would be constructed in accordance with the requirements of WorkSafe Victoria where needed. The RMP (FRC, 2022), states:

- *The Emergency Management Plan will include details of the hazards associated with dangerous goods and appropriate procedures in response to this RMP and other response arrangements to Dangerous Goods related emergencies.*

5. Planning assessment

This section provides the assessment of the proposal against the relevant provisions of the Wellington Planning Scheme and Guidelines. It also provides an assessment of the proposal against relevant renewable energy policy. The assessment is undertaken thematically.

5.1 Site analysis and design response

5.1.1 Land zone

The subject land is within the Farming Zone (FZ) and Public Use Zone (PUZ) as shown in Figure 4-1. Road works (site access) is also proposed within the road reserve zoned Transport Zone (TRZ2). The solar energy facility and utility installation are permissible in the FZ subject to receiving a planning permit and compliance with Clause 53.13 of the scheme.

The proposal would be consistent with the relevant purpose of the FZ, specifically, the proposal is considered compatible and minimises impacts on surrounding agricultural land during operation and post remediation. The proposal would create additional employment in the locality and support the landowner with additional income, specifically agriculture would continue in a capacity suitable for the landowners on remaining productive agricultural land. The proposal includes measures and safeguards to protect the natural environment and systems.

The proposal would be consistent with provisions under the FZ schedule, specifically the proposal (solar infrastructure/panels) would be setback greater than 100m from the nearest dwelling not in the same ownership as the subject land, but is within 100m from the front boundary (the required setback to the TRZ2 zone), and a minimum 5m from all other boundaries.

Before deciding on an application to use land, construct a building or construct or carry out works, in addition to the decision guidelines in Clause 65, the responsible authority must consider Clause 35.07-6 specifically:

- ***General issues*** *– The Municipal Planning Strategy and the Planning Policy Framework. Any Regional Catchment Strategy and associated plan applying to the land. The capability of the land to accommodate the proposed use or development, including the disposal of effluent. How the use or development relates to sustainable land management. Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses. How the use and development makes use of existing infrastructure and services.*
    - The proposal complies with the Municipal Planning Strategy and the Planning Policy Framework as described in section 4.6.
    - The proposal is generally consistent with the West Gippsland Regional Catchment Strategy 2021-2027 (WGCMA, 2021) including the overarching theme of climate change adaptation by providing renewable energy options, avoiding areas of high value habitat and minimising impacts to biodiversity including through weed and pest plant control, protecting natural resources and minimising soil impacts, the site is not within the Macalister Irrigation District, is not considered likely to have any impacts to groundwater and appropriate setbacks are provided from the surface water features on the site.

- The proposal would be sustainably managed, as outlined in section 5.4, section 5.5 and the ecology assessment report provided at Appendix C. The subject land is considered suitable for the proposal as described generally in this PR.
- The proposal is compatible with agricultural and rural residential activities on the subject and surrounding land. Potential impacts would be avoided or minimised for near dwellings through the design of the solar farm and management measures.
- There were various reasons for choosing the proposal site related to making use of existing infrastructure and services, two include ease of access to the site and grid connection directly at the front of the site, refer to suitability of the site discussion in section 5.1.3.

- ***Agricultural issues and the impacts from non-agricultural uses*** – *Whether the use or development will support and enhance agricultural production. Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production. The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses. The capacity of the site to sustain the agricultural use. The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure. Any integrated land management plan prepared for the site.*
  - The proposal would potentially support and sustain agriculture production on the site as outlined in section 5.5 and the agricultural assessment provided at Appendix D. The proposal is compatible with continuing agriculture practices (generally cropping and grazing) on surrounding land as discussed generally in this report, particularly considering control of heat island effect, soil, water and vegetation management.
- ***Environmental issues*** – *The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality. The impact of the use or development on the flora and fauna on the site and its surrounds. The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area. The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.*
  - The proposal would be sustainably managed, a site specific Soil and Water Management Plan would be developed prior to construction. There are no waterways within the site and no foreseen significant adverse impacts as outlined in section 5.4 (consideration of waterways) and section 5.5 (agricultural assessment summary). The ecology assessment considers the natural functions of the site and native vegetation removal impacts, refer to section 5.2 and the full report at Appendix C.
- ***Design and siting issues*** – *The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land. The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts. The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance. The location and design of existing and proposed infrastructure*

including roads, gas, water, drainage, telecommunications and sewerage facilities. Whether the use and development will require traffic management measures.

- The proposal is sited to be compatible with continued agricultural use on the subject and surrounding land and sited and designed to minimise amenity impacts. The proposal is compatible with surrounding developments when considering height of near buildings (dwellings and sheds) and existing vegetation. The proposal would be an average of 30m from the water feature, channel on the site, and subject to final survey. The proposal design has addressed bushfire management. The proposal would connect to existing electrical distribution services within the subject land. Traffic would noticeably increase in the area during construction and decommissioning, traffic during operation would be minor. A Traffic Impact Assessment has been completed for the proposal and impacts would be managed with appropriate Traffic Management Plans, refer to section 5.7 and the report at Appendix F.

5.1.2 Character and landscape

Primary production/agriculture grazing (open paddocks), water channel and drainage lines, gentle hills, woodland and native plantations are natural landscape features of the surroundings of the site, refer to Figure 2-2.

The subject land is used for grazing and includes a native plantation as shown in Figure 5-1.

Figure 5-1 View west from within the proposal site towards Maffra-Briagolong Road (showing open paddocks, woodland vegetation and native plantation visible in the background (Source: NGH, 2022)

General farming activities (grazing) including associated dwellings and rural-residential lots are located on surrounding land, 17 dwellings (non-involved) are located within 1km of the proposal site. The near properties include smaller scale rural residential lots and larger agricultural lots. There is well established roadside vegetation and paddock vegetation providing screening between the dwellings and the proposal site.

5.1.3 Suitability of the site

The proposal site was selected and chosen specifically as it enabled selection of a site that avoids and minimises potential adverse impacts as the priority to address Clause 53.13 of the scheme and the Farming Zone decision guidelines as referenced in section 5.1.1. The proposal site specifically:

- Avoids and minimises impacts to areas of quality native vegetation.
- Minimises impacts of noise and traffic (specifically volumes and access impacts).
- Provides for minimisation of visual impacts utilising existing established vegetation for screening.
- Allows for avoidance of waterways and mapped areas of Aboriginal cultural sensitivity.
- Is of a suitable size that allows for quality solar gain and best practice bushfire management.
- Allows for design and construction that would minimise soil disturbance and impacts of overland flow.
- Allows for design and construction that would be compatible with farming on the remaining parts of the subject land. Agriculture would continue in a capacity suitable for the landowners.
- Allows for design and construction that would be compatible with surrounding farm zone and rural-residential land uses.
- Would connect to the electricity distribution network located within the subject land.
- Can access sewage collection (porta-loo) and water delivery services required for the proposal.

The proposal is consistent with the directions and outcomes of the Wellington Shire Council Plan 2021-25, specifically relating to environment and climate change. The proposal would:

- *Assist community to transition to a low carbon economy via adoption of sustainable practices and renewable energy* (WSC, 2021).

The proposal site is suitable for a solar farm because:

- This PR and supporting studies have found environmental and social impacts would be avoided, minimised, or managed to provide for positive environmental outcomes and protection of amenity.
- The proposal is a viable scale while responding to site constraints and minimising environmental impacts to the site and surrounding locations.
- It has optimal solar resources, suitable land, capacity to rehabilitate, proximity to electrical network and connection capacity.
- Existing distribution lines run parallel to the proposal site. The connection to the power network can be made via a short overhead line.
- Once the proposal reaches the end of its operational life, the site can be remediated to a suitable agricultural condition so cropping or grazing can be resumed.

The siting of the infrastructure for the proposal has been an iterative process, allowing for changes to the layout as needed to allow for necessary protect amenity and mitigate impacts.

The constraints and opportunities for the site are discussed below and in the supporting reports that accompany this PR.

5.2 Ecology

NGH Pty Ltd, on behalf of the proponent, has completed the Ecological Assessment (NGH, 2022) for the proposal, refer to the summary below and full report at Appendix C. The assessment considered the 17.5ha study area, the impact area covers 11.09 ha. The assessment:

- Undertook a desktop search of threatened species and communities listed under the *Flora and Fauna Guarantee Act, 1988 (FFG)* and the *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC)* and desktop assessment of EVC modelling and aerial imagery to determine the extent of native vegetation within the defined Study Area.
- Addressed legislative requirements including Clause 52.17 of the scheme and the permit requirement for removal, destruction or lopping of native vegetation.
- Completed a site assessment to determine the extent of native vegetation and complete a habitat hectares assessment and determined the offset requirements.

The assessment included the native vegetation assessment, scattered tree assessment, vegetation mapping and incidental fauna observations. The key findings were:

- The study area is located in the Gippsland Plain Bioregion.
- One ecological vegetation class (EVC), EVC 55 Plains Grassy Woodland was found to be present within the study area. Two habitat zones were identified, Habitat Zone 1 (grasslands), Habitat Zone 2 (Large Trees and Woodland).
- Habitat Zone 1 is broken into 4 sub-zones, only sub-zone 1a -1c are proposed to be impacted and require offsetting. Habitat Zone 1 occurred as remnant grassland, dominated by Weeping Grass Microlaena stipoides with one small area dominated by native sedges and rushes.
- Within Habitat Zone 2, there are 10 sub-zones. Within this zone, 17 Large Trees are present, of these, 7 are scattered, all other large trees occurred within a woodland patch. No woodland areas would be impacted. Three scattered Large Trees would be impacted (Sub-zoned 2a-2c). Sub-zone 2a and 2b is extant and hollow bearing.
- Fauna habitat was found, however, no threatened fauna was observed during the site assessment.
- Prior to construction targeted surveys are required for Rough-grain Lovegrass (*Eragrostis trachycarpa*). A fauna management plan would be prepared prior to construction to address the impacts and mitigation measures for Swift Parrot *(Lathamus discolor)* and Gang-gang Cockatoo *(Callocephalon fimbriatum)*.
- Weeds and pest animals were identified during the site assessment or have potential to be present in the locality.
- The majority of the development footprint was identified as exotic vegetation.

The proposal has been designed to reduce (avoid and minimise) the potential for ecological impacts including, but not limited to, the following steps:

- The site assessment identified all of the native vegetation on site and further steps in project design were undertaken to minimise native vegetation loss including:
    - Detailed design to avoid patches of native vegetation.
    - Inclusion of existing native vegetation within areas to be utilised for vegetation screening.
    - Design change to avoid all areas of EPBC Act listed native vegetation and all woodland areas.
- The development footprint is located mainly in areas covered by exotic pastures and areas with low quality vegetation.
- The existing access to the paddock will be upgraded and utilised to avoid impacting roadside vegetation.
- The proposal will remove 3.697 ha of EVC 55 grassland and 3 large trees that requires offset (Habitat Zones 1a -1c, 3 scattered trees (Habitat Zones 2a – 2c)) within the development footprint. Habitat Zone 2b would be subject to pruning only, however, requires offset under the guidelines.
- All native vegetation to be retained will be fenced during construction.
- Erect signage to say ‘no-go zones’ tree protection areas.
- Mitigation measures to minimise the biodiversity loss includes:
    - Take steps necessary to avoid harm or injury to wildlife.
    - Fauna salvage prior to tree removal, especially HBT removal.
    - A suitably qualified Zoologist or wildlife handler on site during tree removal or removal of the vegetation in the drainage basin.
    - Bushfire Management includes vegetation protection areas to avoid unnecessary
    - slashing within vegetation to be retained where:
    - During the construction phase, all vegetation within 100 metres of the works areas that are within the property boundary (excluding the vegetation protection areas) are to be managed during the fire danger period so that the grassland is always less than 100mm in height.

The required third-party offsets would be purchased through a broker.

Measures to avoid and minimise potential impacts to ecology of the site are provided in Table 5-1.

Table 5-1 Ecology safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
E1	A Landscape (Flora, Fauna, Weeds, Pest) Management Plan would be prepared and form part of the EMP. The Landscape Management Plan for the site would include measure to avoid and minimise potential impacts to ecology and would be implemented through all stages of the proposal in accordance with the Ecological Assessment (NGH, 2022).	C	O	D
E2	Prior to construction, a survey for Rough-grain Lovegrass (*Eragrostis trachycarpa*) is recommended during in March-April to determine the species presence. The flowering period for this plant is January to April however the survey is recommended	C		

No.	Safeguards and mitigation measures	C	O	D
	when the seedhead reaches maturity at the end of the flowering season. The 2022 survey was completed May which was too late to determine species presence.			

E3	A fauna management plan would be prepared prior to construction to address the impacts and mitigation measures for Swift Parrot (Lathamus discolor) and Gang-gang Cockatoo (Callocephalon fimbriatum). The fauna management plan should consider the following:
	• The seasonal migration of the Swift Parrot (March to August) and include:
	  ○ Limiting any tree removal works during the March to August migration particularly when the Swift Parrot is moving north from Tasmania to the mainland Australia or returning to Tasmania.
	  ○ Check local occurrences recorded each season in proximity to the site.
	  ○ Consider if further consultation is required e.g. Birdlife Australia.
	  ○ Consider if any wildlife permits are required if works are proposed during the migration periods.
	  ○ An ecologist is present on site during vegetation removal.
	  ○ Areas of vegetation to be retained are fenced prior to vegetation removal and construction commencing.
	  ○ Take steps necessary to avoid harm or injury to wildlife.
	  ○ Fauna salvage prior to tree removal, including HBT removal. Including checking of hollows for the presence of breeding or roosting fauna prior to removal.
	  ○ A suitably qualified ecologist or wildlife handler on site during tree removal or removal of the vegetation and habitat features.
	• The seasonal requirements for the Gang-Gang Cockatoo (seasonal migration and breeding requirements)
	  ○ Consider if any wildlife permits are required if works are proposed during the migration periods.
	  ○ An ecologist is present on site during vegetation removal.
	  ○ Areas of vegetation to be retained are fenced prior to vegetation removal and construction commencing.
	  ○ Take steps necessary to avoid harm or injury to wildlife.
	  ○ Fauna salvage prior to tree removal, including HBT removal. Including checking of hollows for
		C		

No.	Safeguards and mitigation measures	C	O	D
	the presence of breeding or roosting fauna prior to removal. ○ Soft fall technique for HBT removal, ensuring tree and hollows are lowered slowly to the ground. ○ A suitably qualified ecologist or wildlife handler on site during tree removal or removal of the vegetation and habitat features.			
E4	The impact area is confined to the development footprint as per Figure 6-1 from the Ecological Assessment (NGH, 2022) showing the vegetation proposed to be removed or retained.	C	**O**	**D**
E5	No areas outside the development footprint would be impacted, including vehicle movements. Any increase to the development footprint would require re-assessment of offset impacts and ecological impacts.	C	O	D
E6	The boundary vegetation and road reserve vegetation will be retained.	C		
E7	Any threatened species finds protocol would be implemented, including having an ecologist on site during vegetation removal. If a species is identified during the construction phase that is suspected of being a threatened species, all works would stop to allow assessment of the species by a suitability qualified person prior to continuation.	C		
E8	All machinery and plant equipment will be cleaned using a high-pressure washer (or other suitable device) prior to entering work sites. Any exotic plant material containing seed heads, including topsoil containing weed propagules, will be disposed of at an appropriate waste management facility or otherwise properly treated to prevent weed spread.	C	**O**	
E9	Herbicides would be used in accordance with the requirements on the label. Any person undertaking herbicide application would be trained to do so and have the proper certificate of completion/competency or statement of attainment issued by a registered training organisation.	C	**O**	
E10	Any fallen timber encountered on site would be left in situ wherever possible or relocated to a suitable place nearby. • Fallen timber would not be 'pushed' into surrounding vegetation and would be 'lifted' and 'placed' to avoid unnecessary disturbance. • Any Coarse Woody Debris (CWD) created from the proposed works would be placed in surrounding	C		

No.	Safeguards and mitigation measures	C	O	D
	vegetation. Any CWD mulched would be spread thinly <100mm deep in surrounding vegetation.			
E11	Erosion and run-off control works, as well as rehabilitation and stabilisation measures, would be undertaken where necessary.	C	**O**	
E12	Bushfire requirements include the following: • Maintaining all exotic grasses to <10 mm in height within the designated development footprint. • All areas of native vegetation outside of this zone are to be retained. • Construction of a secondary access point. During the construction phase, all vegetation within 100 metres of the works areas that are within the property boundary (excluding the vegetation protection areas) are to be managed during the fire danger period so that the grassland is always less than 100mm in height.	C	O	D
E13	Ongoing management of grass cover for the duration of the project may include slashing and grazing.	C	O	

Consistency with planning provisions

The proposal is considered consistent with Clause 52.17 of the scheme as well as state planning policy framework provisions, Clause 12.01 and farming zone decision guidelines as discussed in section 5.1.1 being consistent with the regional catchment strategy and the proposal would be sustainably managed.

The proposal has shown compliance with the environmental issues raised in Clause 35.07-6, *the need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat. The proposal is* consistent with the general decision guidelines Clause 65.01, requiring consideration of t*he extent and character of native vegetation and the likelihood of its destruction, whether native vegetation is to be or can be protected, planted or allowed to regenerate:*

- The Ecology Assessment (NGH, 2022), has addressed the potential removal of native vegetation and impacts on biodiversity and fragmentation of the landscape. To ensure that there is no net loss to biodiversity, measures of avoidance, minimisation and offsetting have been the focus for the siting of the proposal. Removal of native vegetation and protection of habitat would be carefully managed with the commitment and inclusion of appropriate safeguards and mitigation measures. The measures would be incorporated into EMP's for the proposal and implemented as needed through all stages of the proposal.

5.3 Bushfire

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires assessment of:

- Clause 13.02-1 Bushfire planning.
- The risk of bushfire in the area.
- Proponents should consult the relevant fire management authority early in the site selection and design process, to ensure a facility avoids unnecessary bushfire risk exposure and has fire management planning in place to manage risk.

The subject land is identified as a bushfire prone area (BPA). Consultation with the CFA has been completed by the proponent as part of the design process.

The design has considered the CFA's Design Guidelines and Model Requirements: Renewable Energy Facilities (CFA Guideline) (CFA, 2022). The design elements shown on the plans (see Appendix A) are:

- The proposals site coverage of approximately 12ha of solar infrastructure.
- The BESS located near the site entry.
- A 10m wide traversable fire break.
- Water access for firefighting purposes.

The site being within the BPA and triggers the need to consider Clause 13.02 of the Scheme. The proposal would achieve the planning settlement objectives, and it is expected the design could achieve less than Bushfire Attack Level of BAL 12.5 due to the separation between the adjoining properties and the Solar Farm through the provision of a fire break.

Vegetation management during construction and operation including during the fire danger period, availability of water, provision of perimeter fire breaks are key factors in controlling bushfire risk such as potential for onsite and offsite ember attack, radiant heat impact, or flame contact to an acceptable risk. The CFA provides guidance on design of solar facilities to address risk. The proposal site layout has been designed in accordance with the CFA Guideline and is considered to comply with the Guidelines because:

- Provides a fire break and additional managed area between the fire break and the boundary fence.
- The battery systems are contained within the metal cabinets and any fire activity will mostly stay within the cabinets.
- All solar panels are setback at least 15 metres from the boundary fence.
- The monitoring system provides for early notification of a fault and will have the ability to remotely shut down the site if required.
- In addition to the CFA Guideline requirements, the small patches of vegetation that is being retained on the property are disconnected from each other by areas that will be maintained to less than 100mm during the fire danger period.

The proposal is considered consistent with Clause 13.02, specifically as the detailed design would include measures to reduce and minimise bushfire risk and prioritise the protection of human life. The management plans for the proposal would consider the Ecological Assessment findings, and would be prepared in consultation with the CFA and or local brigade as needed.

The relevant measures to reduce and minimise bushfire impacts are outlined in Table 5-2.

Table 5-2 Bushfire safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
BF1	Prior to construction the following plans would be prepared to form part of the EMP's for the site: • Emergency Management Plan. • Fire Management Plan. The plans would be consistent with the Ecological Assessment for the proposal.	C	O	D

Consistency with planning provisions

The proposal is considered consistent with state planning policy framework provisions, Clause 13.02. The provision of all bushfire management areas within the site would be consistent with the farming zone purpose to *ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.* The proposal has been designed to give priority to the protection of human life and property and management plans would address the bushfire hazard of the land, consistent with the general decision guidelines Clause 65.01, requiring consideration of *the degree of fire hazard associated with the location of the land and the use, development, or management of the land so as to minimise any such hazard*.

5.4 Waterways (flooding, inundation, overland flow, groundwater)

No water features are present within the proposal site however, the Stratford Town Supply Channel is located adjacent to the proposal site on the eastern side. The proposal is not located within the Macalister Irrigation District, see mapped area as shown in Figure 5-2.

Figure 5-2 Water features map (Source: VicPlan, 2022)

There is low potential for erosion or sediment to impact waterways in the area. There are no major earthworks anticipated for the proposal and as a result there would be no significant changes to the existing site drainage or overland flow expected during construction and operation. There are no likely adverse impacts to the water catchment as a soil and water management plan would be prepared and would control impacts of the development including design of sediment and erosion controls.

The soil and stormwater management for the proposal would be designed and maintained in accordance with the Victorian EPA guidelines including:

- Publication 1894, Manage soil disturbance (EPA, 2020a).
- Publication 1893, Use a treatment train (multiple control) approach (EPA, 2020b).
- Publication 1895, Manage stockpiles (EPA, 2020c).
- Publication 1897, Manage truck and other vehicle movement (EPA, 2020d).
- publication 1896, Manage how you work within or adjacent to waterways (EPA, 2020e).

The potential risks associated with waterways for the proposal can be reduced by designing in accordance with relevant codes and best practice standards. These measures are outlined in Table 5-3.

Table 5-3 Soil and water safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
W1	A Soil and Water Management Plan would be included in the EMP for the proposal. The plan would specifically address overland flow and sediment and erosion control.	**C**	**O**	**D**

Consistency with planning provisions

The proposal is considered consistent with the provisions of the scheme, specifically the provisions of State Planning Policy Framework Clause 12.03-1S as it relates to river corridors and waterways and Local Planning Policy Framework Clause 21.13 Environment and Landscape Values. Appropriate management plans would be prepared prior to construction to manage soil and water impacts of the proposal.

The proposal has shown consistency with the farming zone decision guidelines as discussed in section 5.1.1, specifically being consistent with the regional catchment strategy and the proposal would be sustainably managed. The proposal has addressed the environmental issues raised in Clause 35.07-6, *the impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality,* and Clause 65.01 *the degree of flood* or *erosion hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard:*

- The proposal would be sustainably managed, and a site specific Soil and Water Management Plan would be developed prior to construction and would address overland flow management and sediment and erosion controls. There are no foreseen adverse impacts to soils as outlined section 5.5 (agricultural assessment summary).

5.5 Agricultural considerations

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires assessment of:

- Potential impacts to agricultural lands that may be high value and of strategic importance.
- Agricultural productivity/carrying capacity of the land.
- Agricultural use, pre, during and post operation.
- Agricultural values and impacts to the wider agricultural land use in the region.

An Agricultural Assessment (Meridian Agriculture, 2022) has been prepared for the proposal, the findings are summarised below, and the report is provided at Appendix D.

The site of the proposal is located on the Briagolong landform, see Figure 5-3. The predominant soil types in this landform are yellow and brown sodosols. These soils would not be considered high quality soils.

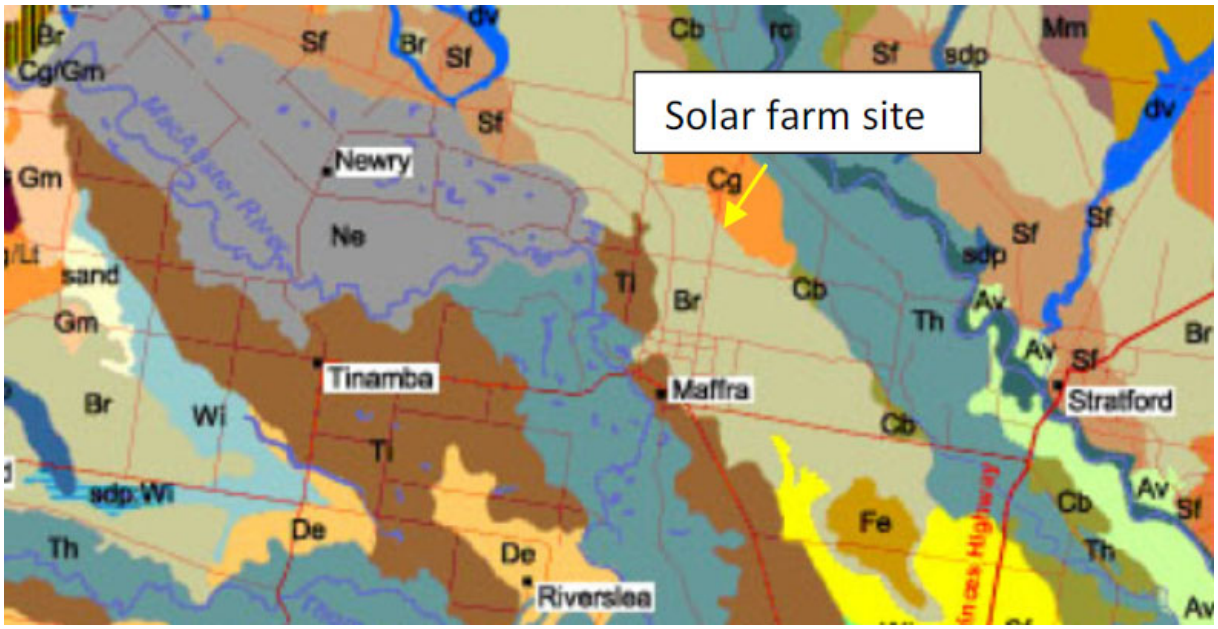


Figure 5-3 Soils mapping (Source: Meridian Agriculture, 2022)

Historical images indicate that for the last 20 years the subject land has been used for grazing cattle. The land has no strategic importance and is not within an irrigation district.

The property has a potential stocking rate of around 13 Dry Sheep Equivalents (DSE)/ha or a maximum of 10 breeding cows. The medium term loss of the number of stock potentially carried on the site is insignificant in relation to the State's cattle herd of 1.4 million head. This is also consistent when considering cropping capabilities.

There would be medium-term loss of part of the agricultural land of the site, but this would not prohibit grazing on the remainder of the subject land during operation of the proposal. Co-location, sheep grazing, within the solar array may be a future agricultural option depending on operational management constraints and animal welfare.

When decommissioning occurs, there would be no residual detrimental impact on the productivity of the site. Soil fertility would decline over time, but this can be corrected rapidly through the addition of suitable amendments.

The proposal would have no effect on the ability of surrounding property owners to undertake agricultural activities, nor would it have a noticeable impact on the agricultural sector in the wider region. The proposed agricultural management measures are outlined in Table 5-4.

Table 5-4 Agricultural safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
A1	As part of rehabilitation works, amendments to soil should be applied to address any decline in soil fertility, at the discretion of the landowner.	**C**		**D**

Consistency with policy provisions

The Agricultural Assessment (Meridian Agriculture, 2022) has addressed the potential for state, regional and local agricultural impacts, land capability, continuation of farming on the subject land, and compatibility of the proposal considering surrounding agricultural land uses.

The proposal is considered consistent with the purpose of the Farming Zone. The assessment demonstrates that the proposal is consistent with the Natural Resources Management provisions of the scheme, specifically the provisions of State Planning Policy Framework Clause 14.01-1S Protection of Agricultural Land and Local Planning Policy Framework Clauses 21-15-2, 21.17-2 and 22.02 as the proposal would not be located on high quality agricultural land and would not compromise farming on the subject land or the surrounding area.

The proposal has shown consistency with the Farming Zone decision guidelines as discussed in section 5.1.1, specifically being consistent with the regional catchment strategy water and land provisions and the proposal would be sustainably managed. The proposal has addressed the environmental issues raised in Clause 35.07-6, *whether the use or development will support and enhance agricultural production, whether the use or development will adversely affect soil quality or permanently remove land from agricultural production, the potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses, the capacity of the site to sustain the agricultural use, the agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure* and Clause 65.01, *factors likely to cause or contribute to land degradation:*

- The proposal would be sustainably managed and support the farming enterprise on the subject land and a site specific Soil and Water Management Plan would be developed. There are no foreseen compatibility or adverse impacts to agriculture continuing on the subject and surrounding land (during, construction, operation, and post rehabilitation) as detailed in the Agricultural Assessment.

5.6 Noise

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires assessment of noise impacts and requires levels at or below the levels in EPA Victoria's Noise from industry in regional Victoria guideline.

An Acoustic Assessment (Renzo Tonin & Associates, 2022) has been prepared for the proposal to determine noise levels, the findings are summarised below, and the report is provided at Appendix I.

The proposal would have the capacity to generate electricity during day light hours. This would predominantly be during day and evening periods (7am-6pm and 6pm-10pm, respectively) throughout the year and potentially part of the night-time period (prior to 7am) during the summer months. Batteries could potentially operate at any time, 24 hours a day, 7 days a week. Although unlikely to occur, the assessment has considered all equipment operating 24 hours a day, 7 days a week to determine the worst case scenario and determine the greatest potential for impacts.

6 sensitive receivers (dwellings), R1 to R6 refer to Figure 5-4 and as listed in Table 5-5. The dwellings are located up to 1190m from the proposal site, with the closest dwelling 680m from the proposal site on Sandy Creek Road, Maffra.

Table 5-5 Acoustic sensitive receivers (dwellings) and distance to the proposal site

Receiver number	Address	Approximate distance to site boundary
R1	62B Sandy Creek Road	850m
R2	22A Sandy Creek Road	680m
R3	155 Brewers Hill Road	1190m
R4	602 Maffra-Briagolong Road	1060m
R5	101 McCubbins Road	1150m
R6	116 Three Chain Road	970m

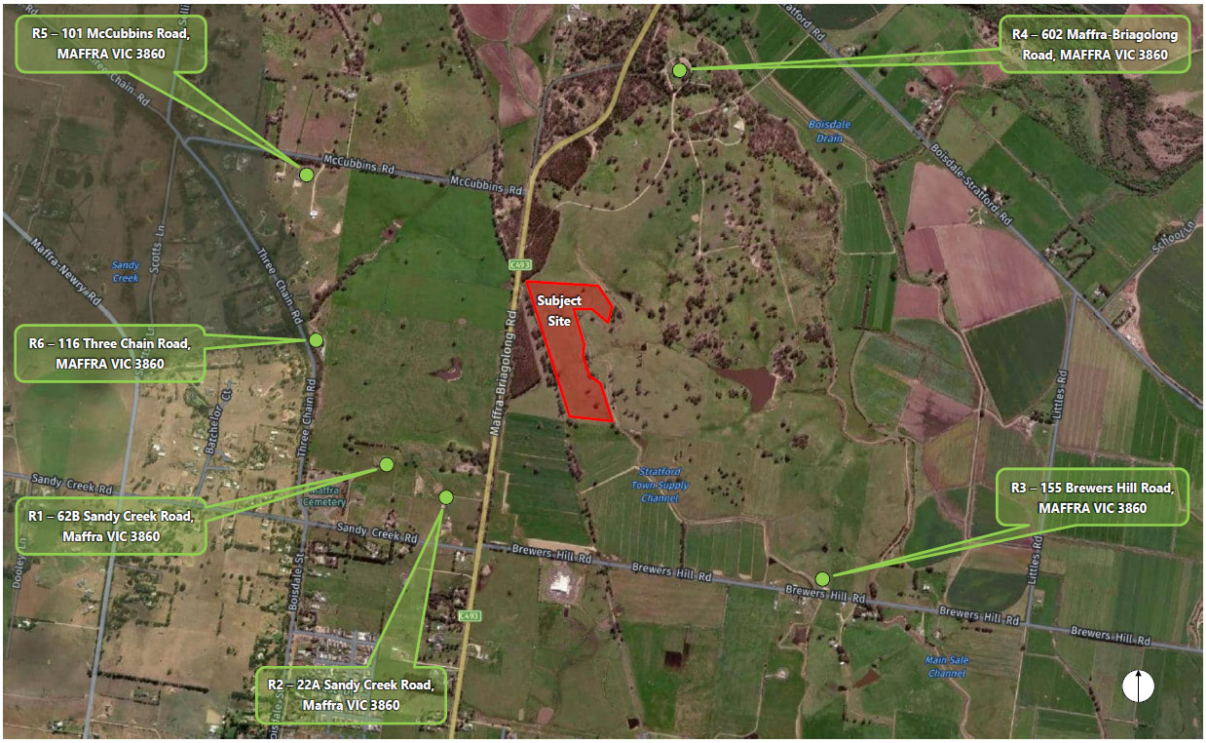


Figure 5-4 Sensitive receivers mapped for noise assessment (Renzo Tonin & Associates, 2022)

To assess noise Renzo Tonin and Associates used the methods in the EPA Publication 1826 'Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues' (EPA pub. 1826).

The assessment considered the applicable noise limits from EPA pub. 1826 as shown in Table 5-6.

Table 5-6 EPA 1826-P1 noise limits

Period	Generating zone	Receiving zone	EPA 1826-P1 limit, L_{eq} dB(A)[1]
Day	Farming Zone	Farming Zone	46
Evening			41
Night			36
Day	Rural Living Zone 2 (RLZ2)	Rural Living Zone 2 (RLZ2)	45
Evening			38
Night			33

EPA 1826-P1 period definitions:

- *Day: Monday-to-Saturday 7am-to-6pm; Sundays NA*
- *Evening: Monday-to-Saturday 6pm-to-10pm; Sundays or Holidays 7am-to-10pm*
- *Night: All days 10pm-to-7am*

In relation to construction noise and vibration, the applicable location of assessment is outside surrounding dwellings, assessed over a 30-minute period. Considered was the EPA Publication 1834 'Civil Construction, Building and Demolition Guide' (EPA Pub. 1834). EPA Pub.1834 provides the guiding design and construction principles and mitigation measures that would be implemented for the proposal to control and limit construction noise and vibration, including but not limited to using quitter equipment or methods, maintaining equipment, managing traffic and haulage, limiting noise caused by people on the site, considering location of sensitive receivers in construction timing and order.

EPA Pub.1834 also sets the noise level standards that would be implemented for normal working hours, weekend/evening work hours, and night hours:

- *Between 6pm and 8pm Mondays to Friday, 1pm and 8pm on Saturdays and 7am to 8pm on Sundays and public holidays, construction noise levels at dwellings be limited to 46 dB(A)*

The recommendation for construction is that only low noise works occur during the 'Weekend/Evening working hours' periods. Specifically for haulage the proposal would limit Heavy Goods Vehicles (HGV) to standard construction hours (Weekdays 7am-6pm; Saturdays 7am-1pm) minimising construction traffic noise.

Vibration would be far less onerous than greater vibration considerations outlined in relevant standards, stating detection of vibration at 50m. As the closest dwelling is 680m from the proposal

site, and any vibration impacts would dissipate with distance, there would be no likely discernible impacts.

The expected noise levels of the operation were assessed and were based on the sound power levels (maximum levels of specific equipment and machinery). Table 5-7 provides details of typical equipment and corresponding sound power levels which have been incorporated into this assessment. Equipment has been assumed to be distributed uniformly across the site except where equipment locations have been indicated specifically in provided drawings.

Table 5-7 Typical equipment and associated power levels

Equipment	**$L_{W,eq}$ Sound Power Levels, dB(A) re. 1pW**
NEXTracker Gemini 2P tracker motors (140 in total)	52 (each)[3]
Inverter/power stations: Sungrow SG4950HV-MV inverters (2 in total)	85 (each)[3]
Substation area: 7 MVA transformer (1 in total)	86 (each)[2]
Battery area: 23 MWH battery storage units (4 in total)	87 (each)[2]
Battery area: Transformers (4 in total)	83 (each)[2]

Table 5-8 presents the predicted noise levels at the nearest 6 dwellings during operation based on all typical equipment operating 24hours a day 7 days a week. It is likely that this would not occur and therefore the predicted levels are an overestimate of likely noise levels.

Table 5-8 Predicted noise levels at dwellings from operation

Dwelling ID	Predicted noise levels, L_{eq} dB(A)	EPA 1826-P1 recommended night-time noise limit (most stringent), L_{eq} dB(A)	Complies?
R1	20	25	✓
R2	18	26	✓
R3	10	36	✓
R4	15	36	✓
R5	15	24	✓
R6	17	24	✓

'On the basis of the assessed configuration, it considered that the 'Proposal' is low risk with respect to operational and construction noise and vibration and can operate continuously and at full capacity without adverse acoustic impact on residential amenity.' No specific measures are required for operation due to compliance with the most stringent noise limits.

The proposed noise management measures are outlined in Table 5-9.

Table 5-9 Acoustic safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
A1	Implement construction noise mitigation measures outlined in the Acoustic Assessment (Renzo Tonin & Associates, 2022), incorporate relevant measures into EMP's. Specifically, for construction only low noise works would occur during the 'Weekend/Evening working hours' periods.	**C**		

Consistency with planning provisions

The proposal is consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to noise and protection of amenity. Appropriate management plans would be prepared prior to construction to manage noise impacts of the proposal.

The proposal has addressed the general decision guidelines Clause 65.01, specifically *the effect on the environment, human health, and amenity of the area*. No adverse noise impacts are anticipated.

The proposal suitably considers and addresses potential noise impacts and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.7 Traffic

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires preparation of a traffic impact assessment (TIA). The TIA should:

- Identify access routes and all roads that would be used to transport construction materials.
- Identify access routes, types of vehicles and traffic generation when the facility operates.
- Specify the timing, type of vehicle, daily volume, and scheduled delivery times of construction materials.
- Provide timelines for the whole construction stage.
- Identify intersection upgrades and any road works required to accommodate access to the site and specify if these are temporary arrangements.

A Traffic Impact Assessment (AMBER, 2022) has been prepared for the proposal, the findings are summarised below, and the report is provided at Appendix F.

Access to the proposal site would be via a new access to Maffra-Briagolong Road, located in the northwest corner of the proposal site. Staff are expected to be primarily housed in Maffra or Sale and surrounding towns with all plant expected to be delivered from Port of Melbourne. Maffra-

Briagolong Road is a under the care and management of Department of Transport and is zoned TRZ2 Principal Road Network. Maffra-Briagolong Road is a B-Double declared road and has a sealed width of approximately 7.0 metres accommodating two-way traffic and has a speed limit of 100km/hr.

Materials would generally be transported to the site on heavy vehicles up to 19m B-double size, minimal use of oversized vehicles would be required. Materials to be transported include, but are not limited to the following:

- PV solar panels.
- Piles, mounting structures and frameworks.
- Electrical equipment and infrastructure including cabling, auxiliary electrical equipment and machinery, inverters, and switchgear.
- BESS.
- Construction and permanent buildings and associated infrastructure.
- Earthworks, grading and lifting machinery and equipment.

Maffra-Briagolong Road accommodates approximately 190 vehicle movements in each of the peak hours, and 1,510 vehicles per day, evenly distributed between north and southbound movements. Maffra-Briagolong Road currently accommodates a low level of traffic which is well within the operating capacity.

The construction is expected to take approximately 6 months, with the peak construction period expected to take 1-2 months.

A maximum of 50 staff would be on-site during peak construction periods. It is understood that shuttle buses would be provided that can accommodate most staff, with the remaining staff to access the site using private vehicles.

The estimated total and (peak) maximum daily traffic movements (one way) during construction are detailed in the Traffic Impact Assessment (AMBER, 2022) and summarised below and provides a breakdown of activities and staff numbers:

- Construction
    - During peak construction the proposal could generate up to 38 heavy and 108 light vehicle movements per day. A *vehicle movement* means a vehicle travelling in one direction (i.e., a truck accessing the site would generate one movement towards the site and one movement away from the site when it departs).
    - 57 vehicle movements are likely during the morning and evening peak hours during the peak construction period, which would reduce to 20 vehicle movements over the typical construction periods.
- Operations – based on 5 FTE staff (emergency and refurbishment excluded)
    - 10 vehicle trips are the expected per day in normal operations when staff visit the site associated with maintenance and operation services. The operational phase would result in a negligible change to the traffic environment.
- Decommissioning
    - Traffic generated during decommissioning would be similar to traffic generation during the average construction period (typical rather than peak construction).

Construction activities would be undertaken during standard daytime construction hours, as follows:

- Monday to Friday: 7am – 6pm.

- Saturday: 7am – 1pm.
- No work on Sundays or public holidays.

Any construction outside of these normal working hours would only be undertaken with prior approval from relevant authorities.

Construction traffic would include:

- Light vehicles including shuttle buses – to transport staff.
- Medium and heavy rigid trucks – to deliver raw materials and small plant.
- Articulated vehicles and B-Doubles – to transport larger plant.
- Restricted access vehicles/oversized and overmass (subject to specific road permits) – to transport oversize plant such as the substation transformer.

Access to the site would be designed in accordance with *Guideline Drawing AGRD Part 4 – Typical Design to Rural Properties* (Vic Roads, 2020).

Cumulative impacts have been considered and with the proximity of the approved Brewer's Hill Road Maffra Solar Farm there is potential for overlapping of construction and may result in increased traffic volumes in the area. As the road network would continue to operate with a good level of service with ample spare capacity, there is expected to be minimal cumulative impacts including through Maffra and Sale.

A Construction Traffic Management Plan would be prepared following proposal approval to manage haulage traffic during the construction phase. Traffic Management Plans would be implemented for all stages of the proposal. Safeguards are outlined in Table 5-10.

Table 5-10 Traffic safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
T1	Prior to construction a Traffic Management Plan (TMP) would be prepared, this would form part of the EMP for the proposal.	C		
T2	The operational EMP would include measures for management of traffic for maintenance and emergency.		O	
T3	A Traffic Management Plan would be prepared prior to the decommissioning phase in conjunction with the relevant road authorities.			D
T4	All TMP's and EMP documents would be prepared in accordance with recommendations in the TIA (AMBER, 2022).	C	O	D

Consistency with planning provisions

The proposal is considered consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to traffic generation and road safety and impacts on roads that would be used for the proposal. Appropriate management plans would be prepared prior to construction to manage traffic impacts of the proposal.

The proposal has shown consistency with the farming zone decision guidelines as discussed in section 5.1.1. The proposal has addressed the design and siting issues raised in Clause 35.07-6, *whether the use and development will require traffic management measures* and general decision guidelines Clause 65.01 specifically *the adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts, the impact the use or development will*

have on the current and future development and operation of the transport system, and *the effect on the environment, human health and amenity of the area*. All anticipated traffic impacts would be managed by the implantation of a Traffic Management Plan and safe access designs that would form part of the EMP for the site.

The proposal suitably considers and addresses potential traffic impacts and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.8 Visual impact and amenity (including light spill and dust control)

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires assessment of the visual impact of a solar energy facility, including:

- Sensitivity of the landscape and its ability to absorb change.
- Size, height, scale, spacing, colour and surface reflectivity of the facility's components.
- Solar energy facilities located close to each other another within the same landscape.
- Excessive removal, or planting of inappropriate species of vegetation.
- Location and scale of other ancillary uses, buildings and works including transmission lines, battery storage units and associated access roads.
- Proximity to environmentally sensitive areas.

To address the requirements of the guideline, a visual impact assessment (VIA) was completed by NGH and is included in Appendix G. For this VIA, visual elements of the proposal include the site access and internal roads, fencing, lighting, inverter, switchstation, solar panel array areas, operations and maintenance building, and battery system. The findings of the VIA are summarised below.

The site of the proposal, as shown in Figure 5-5, is located in the hills to the west of the Avon River, within an area of gently undulating/sloping terrain. The proposal site on an elevation of approximately 60m AHD. The proposal site has a gentle slope to the south, banking down to the channel in the east and up to hills in the southeast. There are near dwellings to the west and east and south that are predominantly below or level with the site. Other near dwellings to the northwest, north and southwest are slightly raised above the proposal site, on elevations of approximately 60-70m AHD. All identified dwellings within 2km of the proposal site are shown in Figure 5-5.

The VIA for the operation stage of the proposal has been conducted considering:

- The specific elements of the proposal including the site access and perimeter fire break, fencing, lighting, substation, inverter, solar panel array areas, operations and maintenance building, battery system, and landscaping. Associated effects of light spill and dust impacts (that can also result in air quality impacts).
- The potential for the proposal to be viewed from representative viewpoints.
- The degree of contrast the proposal would have within the identified landscape management zones (LMZ). LMZs were assigned to viewpoints based on the results of the field work, and the contrast at that viewpoint was evaluated.
- The findings of the Glint and Glare Assessment (MOIR, 2022). The report identified 17 free standing dwellings within 1 km of the Project. Based on the desktop assessment no potential "Yellow" glare was found for the residential receptors. Four (4) route receptors

were identified as part of the assessment. Based on the glare assessment no potential "Yellow" glare was found for the route receptors from the Project.

This evaluation considers the existing views of the development site without any mitigation measures (i.e., vegetative screening or setbacks) and then with proposed mitigation measures. Following changes to the proposal design to reduce visual impacts with mitigation measures, no high impact viewpoints were identified. Moderate and low impacts were found to be possible. The evaluation of impacts is provided in Table 5-11.

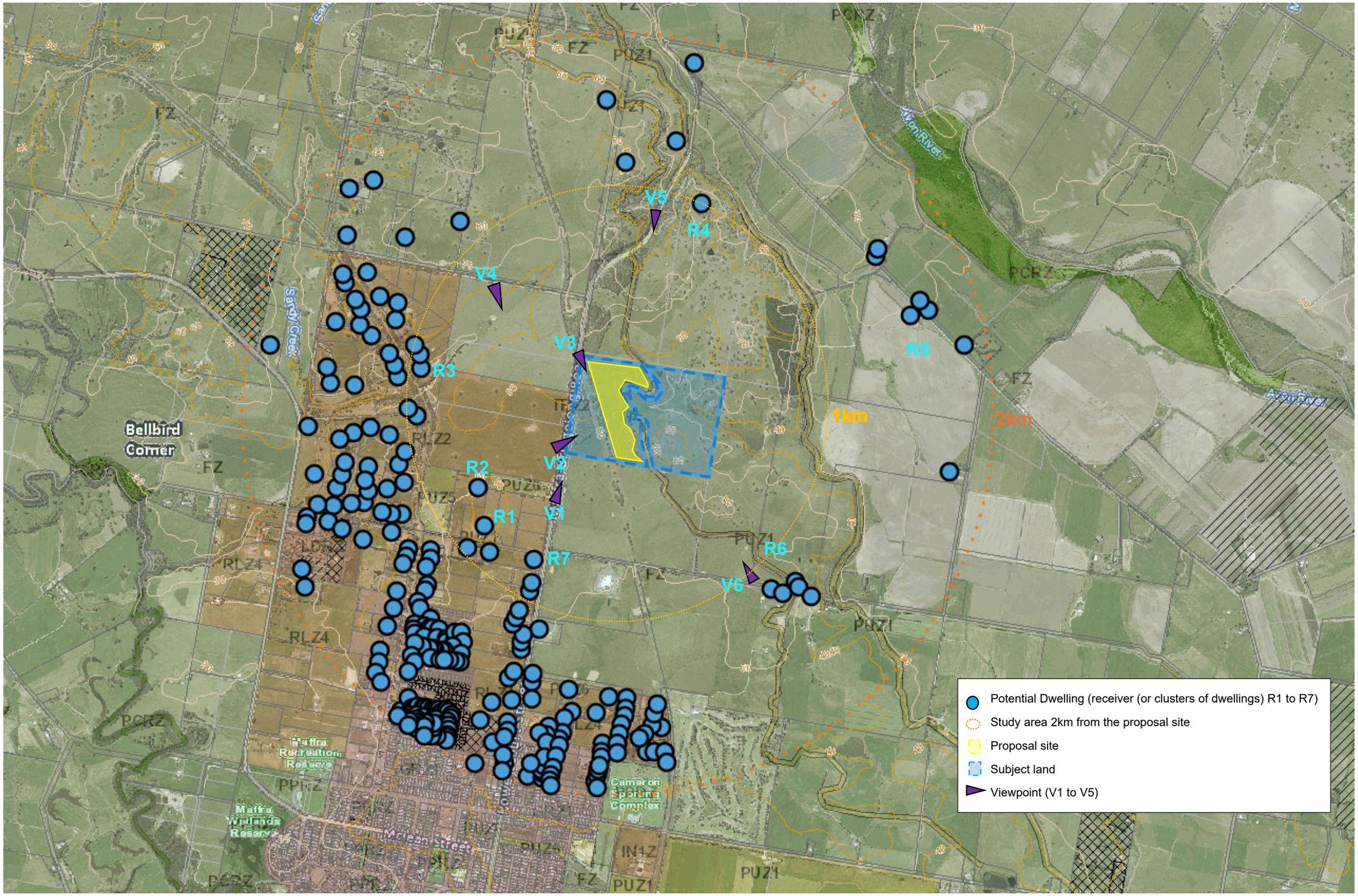


Figure 5-5 Rural dwellings within 2km of the proposal site and viewpoints (photo site and direction) (Source: NGH Adapted from Vic Plan, State of Victoria, 2022)

Table 5-11 Visual impacts at representative viewpoints and their associated receivers.

VIEWPOINT 1 (V1) (representing dwellings within Maffra and those located south of the site along Maffra-Briagolong Road – represented by R7)		
Summary of viewpoint		Viewpoint description / impact
Landscape	Urban and rural-residential (large lots) and associated dwellings with garden boundary plantings, gently sloped down to the south, open grazing land and paddock trees. Roadside vegetation.	V1 representing views from dwellings and traffic travelling north towards the proposal site, identified by R7 on Figure 5-5. This viewpoint is located to the south of the subject land on Maffra-Briagolong Road and has an elevation of approximately 50m AHD. This viewpoint is located approximately 1.1km from the solar farm. The topography, buildings and fences, roadside vegetation and paddock vegetation would currently screen all views to the proposal. Additional traffic would be a temporary impact during construction. The proposal would include a management plan that would address traffic management. **No specific visual mitigation is necessary.**
Scenic quality	Moderate	
Proximity	Middle ground	
Sensitivity	Moderate to Low	
LMZ objective	B to C	
Contrast	Not visible.	
Inherent visual impact	Low.	
Mitigated visual impact	N/A – no mitigation necessary.	

V1 View from representing dwellings within Maffra and those located south of the site along Maffra-Briagolong Road (near 273 Maffra-Briagolong Road) (Source: NGH, 2022)

VIEWPOINT 2 (V2) (representing dwellings R1 and R2, and all dwellings along Sandy Creek Road and all dwellings to the southeast and traffic opposite the site along Maffra-Briagolong Road)

Summary of viewpoint		Viewpoint description / impact
Landscape	Rural and associated dwellings with garden plantings, gently sloped (R1 and R2 are on the rise of the hill), open grazing land and roadside and paddock vegetation.	V2 representing views from dwelling R1 and R2 is located to the southeast of the subject land, considering views towards the southern end of the proposal site. The viewpoint is on an elevation of approximately 60m AHD. This viewpoint is located approximately 650m from the solar farm with R1 and R2 further to the southeast at a minimum distance of 850m. There roadside vegetation, plantation vegetation and paddock vegetation would currently partially to fully screen all views to the proposal. The proposal would have low contrast as the colour of trees and shrubs would be a similar (dark) colour to the solar infrastructure providing for good integration and ability of the landscape to absorb impacts from this viewpoint. The proposed shed located in the southwest corner of the proposal site would be light in colour, but this would be consistent with the rural character of the site and agricultural buildings (materials, colour and scale) in the surrounding area, for example the building located at 40 Brewers Hill. This viewpoint was assessed as generally having a moderate to low sensitivity due to proximity of dwellings,
Scenic quality	Moderate	
Proximity	Foreground	
Sensitivity	Moderate to Low	
LMZ objective	B to C	

Contrast	Low to not visible.	however, minimal to no view is expected. If there is a view of the proposal, the view duration could be expected to be longer due to the close proximity to the site, however, would be a broken and filtered view. Impacts associated with construction may result in visual impacts including lighting and dust. The proposal would include a management plan that would address lighting location and effects. The lighting would be built to relevant standards controlling light spill.
Inherent visual impact	Moderate to Low	
Mitigated visual impact	Low	

View from V2 located at the entry to the Council storage lot-looking northeast towards the proposal site (Source: NGH, 2022)

View from Sandy Creek Road, showing roadside vegetation and rise in land (Source: NGH, 2022)

VIEWPOINT 3 (V3) (representing dwellings to the west and northwest of the proposal site and traffic using McCubbins Road and Three Chains Road)		
Summary of viewpoint		Viewpoint description / impact
Landscape	Rural with associated dwellings with garden and boundary plantings. Gently sloped, open grazing land.	V3 representing views from dwellings located to the west and northwest of the subject land on an elevation of approximately 60m to 70m AHD. This viewpoint is located approximately 1km from the proposal site. This viewpoint is located approximately 650m from the solar farm with R1 and R2 further to the southeast at a minimum distance of 850m.

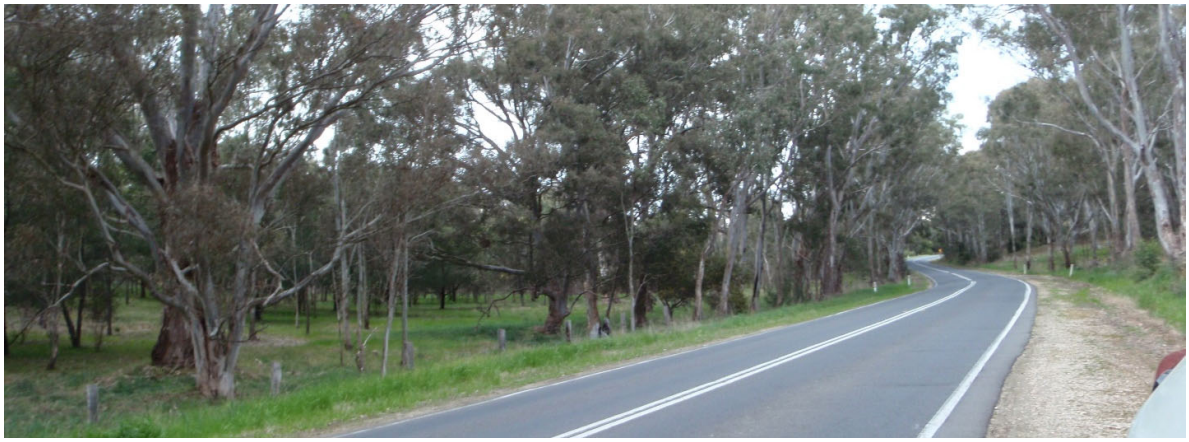
	Roadside vegetation and woodland.	There roadside vegetation, plantation vegetation and paddock vegetation would currently partially to fully screen all views to the proposal. The proposal would have low contrast as the colour of trees and shrubs would be a similar (dark) colour to the solar infrastructure providing for good integration and ability of the landscape to absorb impacts from this viewpoint. This viewpoint was assessed as generally having a moderate to low sensitivity due to proximity of dwellings, however, minimal to no view is expected. If there is a view of the proposal, the view duration could be expected to be longer due to the proximity to the site, however, would be a broken and filtered view. Impacts associated with construction may result in visual impacts including lighting and dust. The proposal would include a management plan that would address lighting location and effects. The lighting would be built to relevant standards controlling light spill.
Scenic quality	Moderate.	
Proximity	Middle ground.	
Sensitivity	Moderate.	
LMZ objective	B to C	
Contrast	Low to not visible.	
Inherent visual impact	Moderate to Low	
Mitigated visual impact	Low	

V3 View from the northwest (McCubbins Road) towards the proposal site (Source: NGH, 2022)

McCubbins Road/Maffra-Briagolong Road intersection looking south (Source: NGH, 2022)

VIEWPOINT 4 (V4) (representing dwelling R4 and those dwellings north, northeast and east of the proposal site and Maffra-Briagolong Road traffic travelling south towards the proposal)

Summary of viewpoint		Viewpoint description / impact
Landscape	Rural with associated dwellings. Gently sloped down to the north, open grazing land. Roadside vegetation, plantation and woodland.	V4 represents views from dwelling R4 located to the northeast of the subject land on the same elevation to the proposal site, approximately 60m AHD. A rise in the land is between the proposal site and R4 up to approximately 70m AHD. This viewpoint is located approximately 1km from the solar farm. The topography, buildings and fences, roadside vegetation and paddock vegetation would currently screen all views to the proposal for R4, except for views from the access driveway to R4 and from Maffra-Briagolong Road adjacent to the entry point to the site. There are expected to be minimal impacts due to the speed of travel and use of the areas. The topography would currently screen all views to the proposal for all dwellings north of R4, to the northeast and east. **No specific visual mitigation is necessary.**
Scenic quality	Moderate	
Proximity	Middle ground	
Sensitivity	Moderate to Low	
LMZ objective	B to C	
Contrast	Not visible.	
Inherent visual impact	Low.	
Mitigated visual impact	N/A – no mitigation necessary.	



V4 View from Maffra-Briagolong Road north of the proposal site (Source: NGH, 2022)

Proposed site entry point location - located in the northwest corner of the proposal site (Source: NGH, 2022)

VIEWPOINT 5 (V5) (representing dwellings at R6 located along Brewers Hill Road)		
Summary of viewpoint		Viewpoint description / impact
Landscape	Rural with associated dwellings with garden and boundary plantings. Flat and sloped land down to the Avon River, open grazing land with paddock trees.	V5 represents views from dwellings to the southeast of the proposal site, this area is lower than the proposal site, on and elevation of approximately 50m AHD. The topography and paddock vegetation would currently screen all views to the proposal site. **No specific visual mitigation is necessary.**
Scenic quality	Moderate	
Proximity	Middle ground	

Sensitivity	Moderate to Low	
LMZ objective	B to C	
Contrast	Not visible.	
Inherent visual impact	Low.	
Mitigated visual impact	N/A – no mitigation necessary.	

V5 View from Brewers Hill Road - Southeast of the proposal site (Source: NGH, 2022)

The area is dominated by open rural land with associated dwellings, woodland, and paddock vegetation. Vegetation and topography prevent some or all views of the site, for most if not all dwellings and road users.

The impacts, post general management and design mitigation, are assessed as Low or no impacts. The proposal is consistent regarding the context of planning scheme policy encouraging renewable energy with *minimal* impact (not 'no impact') on amenity, the proposed level of visual impact is considered acceptable.

Even though there is a similar development within 1km of the site there are only minimal cumulative visual impacts due to the minimal an no views to the proposal site from most viewpoints. The most likely cumulative impacts are for road users travelling along Maffra-Briagolong Road. The other closest solar farm approved in the area is over 17km from the proposal site and would have no cumulative visual impacts. Mitigated outcomes are considered to result in low impacts for adjoining landowners and road users.

Consistency with planning provisions

The proposed Maffra Solar Farm would meet the relevant provisions of the Wellington Planning Scheme, specifically the provisions of clause 53.13 as it relates to protection of amenity and visual impacts associated with the design of the proposal. The proposal would be consistent with the FZ purpose, as they relate to visual impacts, specifically:

- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
    - The proposal would not have adverse visual impacts affecting the use of land for agriculture (including changes to the landscape, views, traffic, light spill, and dust). The dwellings within 2km of the proposal site would have reasonable amenity protected through the design of the solar farm and implementation of management plans.

The proposal would also be consistent with the farming zone decision guideline Clause 35.07-6

- *General issues - Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.*
    - The proposal would be compatible with adjoining agricultural land uses and associated dwellings as the mitigated visual impact rating is low or no impact.
- *Design and siting issues - The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land. The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts. The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.*
    - The proposal has been sited to allow for best screening by existing vegetation.
    - The proposal is compatible with surrounding developments as the height is minimised, the scale of the solar farm is a small utility scale, the topography minimises potential views to a few receivers, the colours and materials of infrastructure would where possible have low contrast with the existing vegetation and the proposed shed would be consistent with rural buildings in the area.
    - The management and design measures would provide for some further integration with the landscape and minimisation and avoidance of potential impacts.

The proposal has been designed to minimise visual impacts consistent with the DELWP guidelines for solar facilities.

5.9 Glint and glare

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires analysis of glint and glare. The analysis should consider impacts on:

- Dwellings and roads within 1 km of the proposed facility, taking into consideration their height within the landscape.
- Aviation infrastructure including any air traffic control tower or runway approach path close to the proposed facility.
- Any other receptor to which a responsible authority considers solar reflection may be a hazard.

A Glint and Glare Assessment (MOIR L.A., 2022) has been prepared for the proposal, the findings are summarised below, and the report is provided at Appendix H.

The Solar Glare Hazard Analysis Tool (SGHAT) was used to evaluate glare resulting from the proposal at different locations around the proposal site and impact on people in cars and for

dwellings (receptors). Single axis tracking PV panels capable of rotating to a maximum of 60° with a north south orientation have been considered for this analysis. Visual receptors within 2km of the site were considered which includes nearby dwellings, buildings, road and/or rail network users, air traffic controllers and/or pilots.

Modelling to show the potential glare consequences for the proposal was based on:

- Position of the sun over time with respect to the location of the proposal.
- Tracking axis tilt, tracking axis orientation and properties of the PV modules.
- Location of sensitive receptors (receivers) from the proposal including residential dwellings, Road and Rail receptors and Flight path receptors.
- Potential to screen the impact by surrounding topography.

Single-axis trackers follow the movement of the sun as it moves east to west throughout the day. Yields are maximised, and light reflection is minimised when panels are directly facing the sun. In times when the sun is not in the tracking range, we assume that the panels instantaneously revert to their resting angle of 0° (flat). Due to this, glare from the backtracking mechanism was more conservatively simulated and at times of sunset and sunrise, when the sun is at a lower angle relative to the array, glare impacts would be more noticeable.

The solar panels have been assessed based on a maximum height of 5.1m above ground level. An average eye height of 1.8m has been used and to represent a commercial vehicle and 2.4m for a truck driver's eye height. For dwelling occupants an average eye height of 1.5m has been considered.

4 route receptors and 17 dwelling receptors were identified (OP01-OP17), refer to Figure 5-6. No airstrips were identified within 5km of the proposal site.

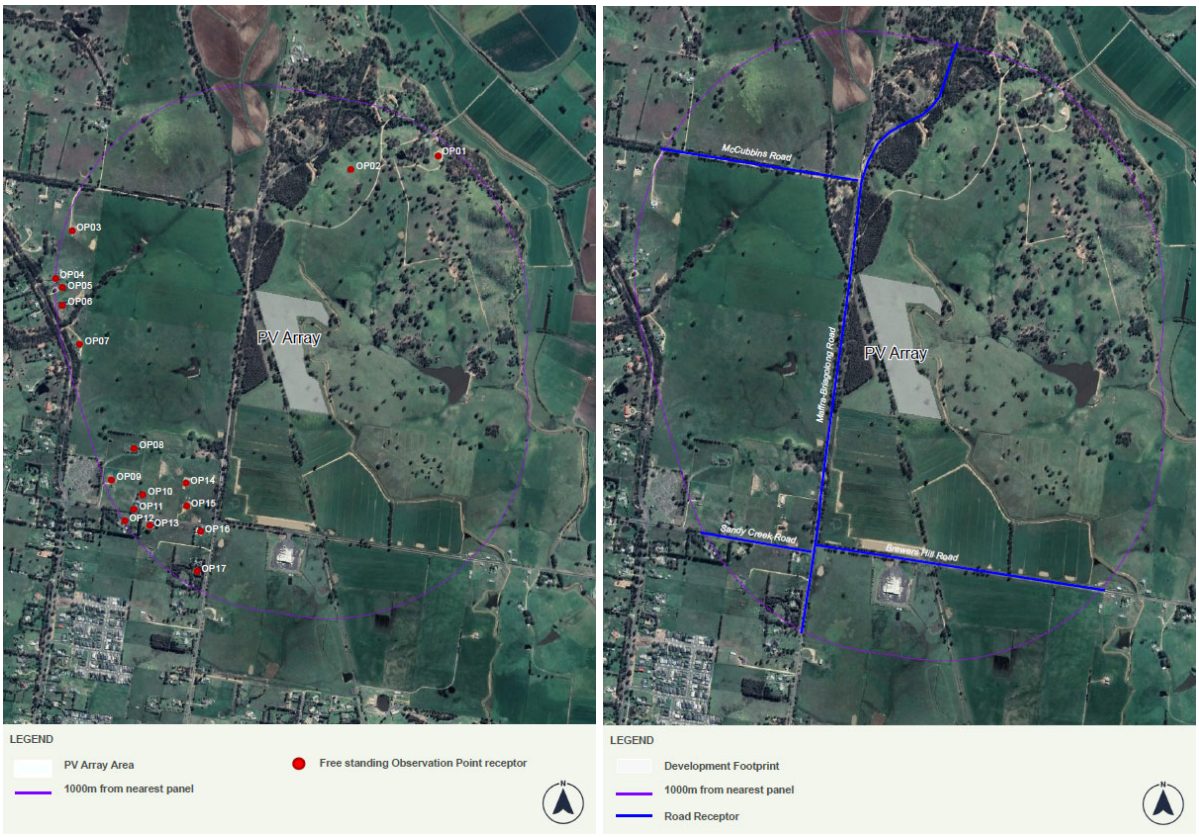


Figure 5-6 Glint and Glare assessment location of receptors (MOIR, 2022)

Based on the desktop assessment none of the receptors (dwellings or routes) would experience annual 'Yellow' glare (potential temporary after image) needing mitigation from the solar array.

Only the McCubbins Road route may experience up to 1.9 hours of the potential 'Green' glare per year which is recognised as the low potential for after imaging.

Desktop analysis of the dwellings using aerial imagery indicates existing dense and scattered vegetation surrounding the Project which would likely screen any further impacts. No mitigation is required for any receptors, additional supplementary planting is not necessary.

Consistency with planning provisions

The proposal is consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to protection of amenity and impacts of glare. The proposal has addressed the general decision guidelines Clause 65.01, specifically *the effect on the environment, human health and amenity of the area*. No significant adverse glare impacts are anticipated. Appropriate plans would be prepared prior to construction, showing measures to manage glint and glare impacts of the proposal, management plans would include ongoing management of screening vegetation for the life of the proposal.

The proposal suitably considers and addresses glint and glare impact and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.10 Electromagnetic fields

The (DELWP, 2022) solar farm guidelines state *electrical equipment produces electromagnetic radiation. Radiation produced by transformers and inverters is reduced through performance standards that apply to standard components. The Australian Radiation Protection and Nuclear Safety Agency advises that the strength of this radiation will decrease with distance from the source, and it will become indistinguishable from background radiation within 50m of a high voltage power line and within 5 to 10m of a substation. The design and layout of the facility should account for this information.*

Electric and magnetic fields (EMFs) are produced whenever electricity is used. EMFs also occur naturally in the environment, such as the Earth's magnetic field and discharges during thunderstorms (WHO, n.d.).

Electric fields are produced by voltage and magnetic fields are produced by current. When electricity flows, EMFs exist close to the wires that carry electricity and close to operating electrical devices and appliances (WHO, 2007). Electric and magnetic field strength reduces rapidly with distance from the source.

Over decades of EMF research, no major public health risks have emerged, but uncertainties remain (WHO, 2007). While it is accepted that short-term exposure to very high levels of electromagnetic fields can be harmful to health, the International EMF Project, established by the World Health Organisation, has thus far concluded that there are no substantive health consequences from exposure to Extremely Low Frequency (ELF) electric fields at the low levels generally encountered by the public (WHO, 2007), such as those that would be produced by electricity generation from the proposal.

The proposal includes six main types of infrastructure that could create EMFs:

1. Solar arrays (up to 5MW).
2. One inverter.
3. Underground cables.
4. Overhead transmission lines.
5. Onsite substation.
6. Energy storage facility with a capacity of approximately 23MWh.

There is low potential for EMF impacts during the construction and decommissioning phases of the proposal. Staff would be exposed to EMFs over intermittent periods during works at and around the existing 22kV distribution line and inverter. Exposure to EMFs during the construction would be short term, therefore the effects are likely to be negligible.

During operation, EMF sources would include overhead transmission lines, underground cabling, and the solar array incorporating PCUs.

The site is surrounded by agricultural land. Public access would be restricted by site fencing around the site and existing substation during the operational phase. Given the levels associated with the infrastructure components, and the distance to the site perimeter fence, EMFs from the proposal are likely to be indistinguishable from background levels at the boundary fence. The underground cabling would not produce external electric fields due to shielding from soil, and its magnetic fields are expected to be well within the public and occupational exposure levels recommended by ARPANSA (ARPANSA, 2015) and ICNIRP (ICNPR, 2020).

By prudently designing and siting infrastructure, exposure to EMFs and potential for adverse health impacts can be further reduced. Adverse health impacts from EMFs are therefore unlikely because of the proposal.

The potential risks associated with EMFs for the proposal can be reduced by designing the infrastructure in accordance with the codes and best practice standards by a suitable qualified person. These measures are outlined in Table 5-12.

Table 5-12 EMF safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
E1	All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia.	**C**		
E2	All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required. Work to be carried out in accordance with relevant Victorian standards, for example, The Blue Book 2017 (Energy Safe Victoria, 2017).	**C**	**O**	
E3	Design of electrical infrastructure would minimise EMFs.	**C**		

Consistency with planning provisions

The proposal is consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to protection of amenity and impacts of electromagnetic fields. Appropriate plans would be prepared prior to construction, showing measures to manage impacts associated with

electrical equipment. All construction would be undertaken by appropriately qualified and licenced persons. The proposal has addressed the general decision guidelines Clause 65.01, specifically *the effect on the environment, human health, and amenity of the area*. No adverse impacts from potential electromagnetic fields are anticipated.

The proposal suitably considers and addresses potential electromagnetic field impacts and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.11 Heat island effect

The (DELWP, 2022) solar farm guidelines state *where a solar energy facility is proposed adjacent to existing horticultural or cropping activities, a minimum 30m separation distance is appropriate, measured from the property boundary to any part of the physical structure of the facility. The PV heat island effect on sensitive vegetation (such as cold-climate horticultural cropping) describes the transfer of heat from built form to its surrounds, where the ambient temperature around the built form is higher than that of surrounding vegetated areas, particularly at night. While there are few studies of spatial heat dissipation from solar infrastructure, those that exist acknowledge the potential for ambient air temperatures within the perimeter of a solar energy facility to potentially increase by 3 to 4 degrees Celsius. However, those studies also found that the heat that was generated dissipated rapidly over a short distance. Some found that at 30m from the solar PV array, the air temperature variation was indistinguishable from ambient air temperature.*

'Heat island' is defined as an area having higher average temperature than its surroundings owing to the greater absorption, retention, and generation of heat by buildings, pavements, and activities. This is usually used in reference to the impact of an urban area on its rural surroundings. Studies have shown that Photovoltaic (PV) panels convert incident solar radiation into heat, and this can alter the air flow and temperature profiles near the panels. Whether such changes may subsequently affect the thermal environment of near-by populations of humans and other species have been questioned (Fthenakis and Yu, 2013). However, to date there have been limited empirical studies on the potential for a heat island effect in utility scale solar farms.

The limited studies that do exist also show results that can be seen as contradictory, as they are so site and project specific. Some studies suggest that PV systems can cause a cooling effect on the local environment, depending on the efficiency and placement of the PV panels while others demonstrate a warming effect (Barron-Gafford, Minor, Allen, Cronin, Brooks, and Pavao-Zuckerman, 2016). Other studies conclude that whilst air temperatures may increase within the solar farm itself, they rapidly decrease to the ambient temperature beyond the perimeter of the solar farm (Fthenakis and Yu, 2013).

Fthenakis and Yu (2013) undertook an analysis of the potential for large solar farms to generate a heat island effect and increase air temperature within the solar farm area. The study found at the centre of the solar farm, the annual average air temperature at a height of 2.5m increased by up to 1.9^{o}C. However, this increase in temperature dissipated at a height of 5m. Additionally, the solar farm completely cooled overnight.

The research suggested a small potential effect on climate within the proposal site. This effect may enhance retention of ground cover in very cold or hot conditions onsite. No impacts on adjacent properties and agricultural activities would occur.

The topic has also been subject to recent consideration by a Victorian Planning Panel for solar farms proposed in Greater Shepparton for solar farms proposed by Neoen and X-Elio. This is detailed in the *Panel Report for the Greater Shepparton Solar Energy Facility Planning Permit Application 2017-162, 2017-274, 2017-301 and 2017-344* (Panel Report, 2018). Neoen, in preparation of a response to key issues raised in objecting submissions, commissioned a *Statement of Evidence by Greg Barron-Gafford* from the Research Group Biography, Ecosystem Science (University of Arizona) (Barron-Gafford, 2018).

Barron-Gafford (2018), in his Statement of Evidence (SoE) to the Victorian Planning Panel included results on the radius of the measured heat effects. This identified that the PVHI effect was indistinguishable from air temperatures over native vegetation when measured at 30m from the edge of the PV array (Figure 5-7). In his SoE he states that:

'this pattern held true for both daytime and night-time conditions. Because the PV panels themselves trap the energy from diffuse sunlight that was able to reach the ground underneath them, air temperatures remain elevated within a PV array. As you leave this "overstorey" of PV panels, energy is able to radiate back towards the atmosphere, as it does in a natural setting, and the PVHI quickly dissipates'.

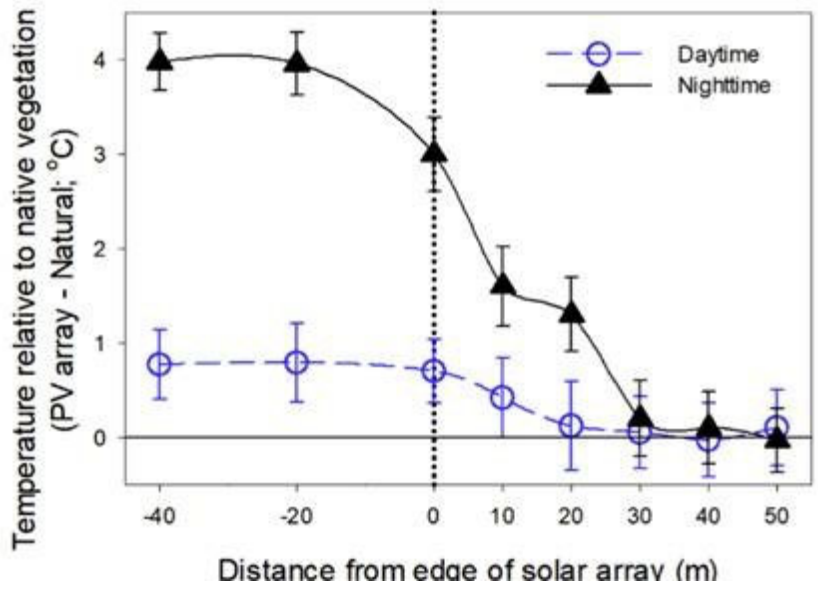


Figure 5-7 Measures of air temperature within and outside of the PV array (Barron-Gafford, 2018)

In conclusion, the Victorian Planning Panel Report (Panel Report, 2018), accepted that solar arrays would affect air and soil temperatures within the solar array perimeter, but that in relation to outside of the solar array perimeter a heat island effect is unlikely to occur, but where orchards or the like are present a 30m buffer should be maintained.

The distances (setbacks of a minimum of 15, from the north boundary and 30m from the south boundary) to the proposals solar (PV) array from the subject land boundaries provides for reasonable separation. As such there are no likely potential heat island effects from the proposal on adjoining land. There are no sensitive receivers, orchards or the like within relevant proximity to (30m of) the infrastructure. Neighbouring land use to the north is limited to grazing activities which are not identified in policy as likely to be significantly impacted by heat island effects of a solar facility. It is unlikely that there will be any negative impact on agricultural productivity resulting from a lesser, 15m setback at this interface.

The potential risks associated with heat island effect for the proposal has been avoided by designing for reasonable setbacks.

Consistency with planning provisions

The proposal is considered consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to protection of amenity and potential climate impacts. The plans provided at Appendix A show setbacks complying with the proposed mitigation measures. The proposal has addressed the general decision guidelines Clause 65.01, specifically *the effect on the environment, human health, and amenity of the area*. No adverse impacts from potential heat island effect are anticipated.

The proposal suitably considers and addresses potential heat island effect impacts and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.12 Waste and dangerous goods

The proposal includes works that require management of waste and use of dangerous goods.

Dangerous goods would be required to be transported, stored, and disposed of as part of the Proposal. This relates to the proposed ancillary battery energy storage facility.

Management of waste would be required during construction, operation (maintenance and general waste), and upgrading or decommissioning of the proposal. Installation, operational maintenance, and decommissioning of the ancillary battery energy storage facility.

Dangerous goods would be required to be transported, stored, and disposed of as part of the Proposal. This relates to the proposed BESS and proposed use of lithium-ion batteries.

Batteries may require replacement during the life of the proposal. The batteries are designed for outdoor use, generally only require a secure foundation i.e., concrete slab, and specified clearances for service access.

Lithium-ion batteries are considered to pose little threat to people or property, although they may pose an environmental hazard or fire risk. The batteries, however, would be classified as a Class 9 miscellaneous dangerous goods and Class 9 hazardous goods (both new and waste batteries).

Lithium-ion batteries are classified as hazardous waste under the Commonwealth Hazardous Waste Act 1989 and are classified as Dangerous Goods under the ADG Code. The ADG Code requires dangerous goods to be carried in a secure, safe, and environmentally controlled manner. The code specifies ‘special provisions’ and ‘packing instructions’ applying to the transportation of Lithium-ion batteries.

Lithium-ion batteries do not contain any heavy metals. They do contain valuable material that can be recycled. The Australian Battery Recycling Initiative (ABRI) website indicates four companies which provide a collection and recycling service for used lithium-ion batteries.

The major hazard offered by lithium-ion battery technologies is fire. The proposal includes measures to minimise fire risk associated with the BESS. The proponent and/or their contractor would be responsible for identifying the need for and notifying of WorkSafe Victoria as appropriate for transport and or storage/handling of dangerous or hazardous goods associated with the proposed BESS.

The potential risks associated with waste and dangerous goods for the proposal can be reduced by handling them in accordance with Australian Standards and codes as well developing protocols for maintenance and incident response including consideration of applicable Victorian standards or national approach or policy on waste (Sustainability Victoria, 2022). These measures are outlined in Table 5-13.

Table 5-13 Waste safeguards and mitigation measures

No.	Safeguards and mitigation measures	C	O	D
H1	A waste minimisation and management plan would be developed as part of the EMP for the proposal. Waste would only be disposed of at a facility lawfully permitted to accept the waste.	**C**	**O**	**D**
H2	The proponent and/or their contractor would be responsible for identifying the need for and notifying of WorkSafe Victoria as appropriate for transport and or storage/handling of dangerous or hazardous goods associated with the proposed ancillary battery energy storage facility. The transportation of new and waste lithium-ion batteries would comply with the requirements of the Dangerous Goods Code, including specific 'special provisions' and 'packing instructions' applying to the transportation of Li-ion batteries.	**C**	**O**	**D**
H3	Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: The storage and handling of flammable and combustible liquids.	**C**	**O**	**D**
H4	Protocols would be developed for lithium-ion battery storage, maintenance, and incident response to mitigate Li-ion fire risks.	**C**	**O**	**D**

Consistency with planning provisions

The proposal is consistent with the provisions of the scheme, specifically the provisions of Clause 53.13 as it relates to protection of amenity and waste impacts associated with the construction, operation, and decommissioning of the proposal. Appropriate management plans would be prepared prior to construction to manage waste for the proposal.

The proposal has addressed the general decision guidelines Clause 65.01, specifically *the effect on the environment, human health, and amenity of the area*. No adverse impacts from potential waste are anticipated.

The proposal suitably considers and addresses potential waste generation and impacts and provides proposed mitigations consistent with the Solar Energy Facilities – Design and Development Guideline (DELWP, 2022).

5.13 Cumulative impacts

The Solar Energy Facilities Design and Development Guideline (DELWP, 2022) requires consideration of cumulative impacts. *The clustering of solar energy (or other renewable energy) facilities in an area can result in efficiencies by sharing existing, or augmenting, electricity network infrastructure. However, too many facilities in an area can:*

- *Reduce the availability and/or productivity of strategic agricultural land, particularly in irrigation districts.*
- *Result in landscape-scale visual impacts, due to an overconcentration of built form in an area.*
- *Impact the area's biodiversity, habitat or wildlife, due to an overconcentration of built form.*

The cumulative impacts of solar energy facilities on an area can be reduced by:

- *Having a mix of land use activities including solar energy facilities in the area.*
- *Agrophotovoltaics — the dual use of a site with agriculture.*
- *Having enough distance between solar energy facilities within an area to minimise or avoid environmental impacts and natural hazard risk exposure.*

The closest solar facilities (as mapped by DELWP, refer to Figure 2-1 are:

- Maffra Solar Farm (Brewers Hill Road), approximately 630m south from the proposal site.
- Perry Bridge Solar Farm, approximately 17km east from the proposal site.
- Fulham Solar Farm, approximately 19km south from the proposal site.

Despite proximity to the Brewers Hill Road Maffra Solar Farm, the proposal avoids built form cumulation or concentration due to the topography, siting within the subject land, and use of established vegetation to provide screening of the site. The proponent has considered efficiencies and capacity in consultation with the electricity network operator.

Due to the small scale of the proposal and limited solar facilities in the immediate area surrounding the proposal site, the proposal is would not:

- Reduce the availability and/or productivity of strategic agricultural land because the land would be returned to agricultural land after decommissioning. During construction and operation, the land surrounding the proposal would continue to be available for agricultural purposes and co-location would be possible within the proposal site subject to development of appropriate management plans. There is significant land in the region to support agriculture as a primary strategic economic land use.
- Result in landscape-scale visual impacts because the visibility of both Maffra solar farms would not be possible from public land or dwellings, and therefore there are no cumulative landscape impacts from a single point. The only potential impact could occur as separate glance views from vehicles travelling at speed along the Maffra-Briagolong Road, however the separation of both facilities from the road minimises impacts.
- Impact the area's biodiversity, habitat, or wildlife, because the impacts at site scale have been avoided and minimised as a priority, resulting in minimal to negligible impacts within the region.

The subject land will have a mix of land uses and maintain agricultural activities and has separation from solar energy facilities within the area avoiding or minimising environmental impacts and natural hazard risks.

6. Consultation

6.1 Engagement of Registered Aboriginal Parties

BNRG Leeson contacted the Registered Aboriginal Party, the Gunaikurnai People, represented by the Gunaikurnai Land and Waters Aboriginal Corporation

Specifically, the engagement included discussions to understand the cultural sensitivity of the proposal site. No areas of sensitivity were identified.

6.2 Engagement strategy

BNRG Leeson completed engagement for the proposal with available stakeholders, including Wellington Council planning department, DELWP and the CFA. Consultation with Council and the Department of Transport regarding traffic matters was completed by the traffic engineer engaged for the proposal.

6.2.1 Door knocking/face to face contact

The engagement included face to face contact including a visit to properties near the proposal site. For the residents that were available, a BNRG representative provided details about the proposal, including proposed layout, design and construction, and operation.

6.2.2 Community drop-in session

The engagement included a community drop-in session at a local hall. BNRG representatives attended.

6.3 Outcomes

Outcomes of the engagement, including agency, community and neighbour comments have been considered in the preparation of this PR and preparation of specialist reports and proposal plans.

Feedback included questions about the proposal and positive responses. No concerns were raised.

Ongoing and proposed future engagement

The proponent is committed to continuing consultation with the community as the project develops, including providing updates on the webpage for the proposal:

- https://www.bnrgleeson.com.au/maffra-solar-farm

7. Conclusion

The proposed Maffra Solar Farm meets the relevant provisions of the Wellington Planning Scheme and is consistent with Section 47 of the *Planning and Environment Act 1987*. The proposal has taken into consideration all matters relevant to renewable energy facilities outlined in DELWP's Solar Energy Generating Facility Guidelines.

The proponent commits to carrying out the proposal in accordance with the safeguards and mitigation measures outlined in this PR. Overall, the proposal is expected to have minimal environmental and amenity impacts. The proposal would result in a positive impact for the community and local economy.

The proposal would provide the following benefits:

- Producing clean energy, offsetting approximately 9993 tonnes of carbon emissions per year.
- The BESS would aid peak energy needs.
- It would diversify income and increase revenue to ancillary services such as food, lodging and tourism for the local area during construction.
- It would create jobs – up to 50 staff on site at any time during construction (peak times) and up to 5 FTE during operation over the life of the proposal.
- The proposal is consistent with the Clause 53.13 Renewable Energy Facility and other relevant provisions of the planning scheme.
- The nature of the proposal would not negatively impact the character and amenity of the site and the adjoining land uses, specifically for dwellings in proximity to the proposal site.

This PR and all supporting documents have shown that there are reasonable grounds for the Minister to consider issuing a planning permit for the proposal. The safeguards and mitigation measures committed to by the proponent in this PR would enable a development that avoids and minimises environmental and amenity impacts.

8. References

ABS. (2016). *Australian Bureau of Statistics-Quickstats*. Retrieved from https://www.abs.gov.au/census/find-census-data/quickstats

AMBER. (2022). *Traffic Impact Assessment Maffra Solar Farm.* Melbourne: Amber Organisation Pty Ltd.

ARPANSA. (2015). *Electricity and health.* Australian Radiation Protection and Nuclear Safety Agency. Retrieved from https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/electricity

CFA. (2022). *Design Guidelines and Model Requirements: Renewable Energy Facilities (Version 3).* VIC: State of Victoria (Country Fire Authority) 2022.

DELWP. (2022). Retrieved from VicPlan: https://mapshare.vic.gov.au/vicplan/

DELWP. (2022). *Solar Energy Facilities Design and Development Guidelines.* Victorian Government, Department of Environment, Land, Water and Planning.

Energy Safe Victoria. (2017). *The Blue Book 2017, Code of Practice on electrical safety for the work on or near high voltage electrical apparatus.*

FRC. (2022). *Maffra Solar Energy Facility and Battery Energy Storage System - Risk Management Plan.* Fire Risk Consultants.

ICNPR. (2020). *Guidelines For Limiting Exposure To Electromagnetic Fields (100 kHz to 300 GHz).* International Commission on Non-Ionizing Radiation Protection.

Meridian Agriculture. (2022). *Agricultural Assessment Report Maffra Solar Farm.*

MOIR L.A. (2022). *Maffra Solar Farm Glint and Glare Assessment.* Moir Landscape Architecture.

NGH. (2022). *Ecological Assessment Maffra Solar Farm.* Wodonga: NGH Pty Ltd.

NGH. (2022). *Maffra Solar Farm Visual Impact Assessment.* NGH Pty Ltd.

Renzo Tonin & Associates. (2022). *Maffra Solar Farm Acoustic Report.* Melbourne.

Sustainability Victoria. (2022). *National approach to manage solar panel, inverter and battery lifecycles*. Retrieved from Sustainability Victoria: https://www.sustainability.vic.gov.au/research-data-and-insights/research/national-approach-to-manage-solar-panel-inverter-and-battery-lifecycles

WGCMA. (2021). *West Gippsland Regional Catchment Strategy 2021-2027 (RCS) .* West Gippsland Catchment Management Authority .

WHO. (2007). *Electromagnetic fields and public health: Exposure to extremely low frequency fields*. Retrieved June 4, 2020, from World Health Organization: https://www.who.int/peh-emf/publications/facts/fs322/en/

WSC. (2021). *WELLINGTON SHIRE COUNCIL PLAN 2021-25.* Wellington Shire Council.

WSC. (2022). *Homepage*. Retrieved from Wellington Shire Council: https://www.wellington.vic.gov.au/

APPENDIX A PROPOSAL PLANS

APPENDIX B CERTIFICATE OF TITLE

APPENDIX C ECOLOGY REPORT

APPENDIX D BUSHFIRE REPORT

APPENDIX E AGRICULTURE ASSESSMENT

APPENDIX F TRAFFIC IMPACT ASSESSMENT

APPENDIX G VISUAL IMPACT ASSESSMENT

APPENDIX H GLINT AND GLARE ASSESSMENT

APPENDIX I ACOUSTIC ASSESSMENT