Application for a Planning Permit

520 Meningoort Road, Lots 51 and 52 and Res 1 on LP4677 and adjacent parts of Meningoort Road, Bookaar

Corangamite Planning Scheme

Use and development of a solar energy facility

Date of report: August 2021

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1. Introduction

This Planning Report has been prepared at the request of Bookaar Renewables Pty Ltd (the 'Proponent') to support a permit application for a solar energy facility (the 'Proposal') encompassing part of 520 Meningoort Road, Lots 51 and 52 and Res 1 on LP4677 and adjacent parts of Meningoort Road, Bookaar (the 'Site'). The Site is part of two broader landholdings that are currently used for cropping, cattle and sheep grazing, and is located approximately 8 kilometres north-west of the town of Camperdown. All land outside the Site and within the broader landholdings would remain undisturbed and continue to be used for agriculture.

The purpose of the Proposal is to construct and operate a 200 MWac (282 MWdc) solar energy facility at the Site to supply electricity to the National Electricity Market (the 'NEM') utilising photovoltaic (PV) panels.

The Proposal will generate an estimated 460 GWh of renewable electricity annually over its 28 year operational life. This equates to enough clean energy to power the equivalent of 92,000 average Victorian households each year. Importantly, when operational the Proposal will offset approximately 519,000 tonnes of Carbon Dioxide (CO_2) annually[1], making a significant contribution to Victorian, Australian and International emission reduction targets.

In addition to the environmental benefits, the Proposal will generate employment and contribute to the economic growth of the Corangamite Shire, while diversifying land use and energy generation in the region.

1.1 Plans and Supporting Documentation

This report should be read in conjunction with the following:

- Site / Context Analysis and Design Response Plans prepared by DCA Design;
- Development Plans, consisting of the 'Site Plan' and appendices, prepared by NG Electrical;
- Letter of Advice regarding use of government roads (Crown land) from the Department of Environment, Land, Water and Planning;
- Report on Agricultural Land prepared by RM Consulting Group;
- Bushfire Risk Assessment & Mitigation Plan prepared by Fire Risk Consultants;

[1] *Based on the current emission figures of 1.13kg CO2-equivilent/kWh, Essential Services Commission, 'Greenhouse gas co-efficient 2020, available at https://www.esc.vic.gov.au/sites/default/files/documents/Greenhouse%20gas%20coefficient%20-%2020200905_1.pdf, accessed on 25.10.2020.*

- Supplementary Cultural Heritage Report prepared by Ecology & Heritage Partners;
- Biodiversity Assessment prepared by Ecology & Heritage Partners;
- Traffic Impact Assessment prepared by Ratio Consultants;
- Landscape and Visual Impact Statement prepared by Jacobs Group;
- Flood Impact Assessment prepared by Venant Solutions;
- Amenity Report prepared by Bookaar Renewables

  (addresses Nosie and Vibration, Glint, Light Spill, Emissions to Air, land and water, Smell and electromagnetic interference);
- Economic Impact Assessment prepared by Ethos Urban; and
- Preliminary Environmental Management Plan prepared by Bookaar Renewables.

1.2 Bookaar Renewables Pty Ltd v Corangamite SC [2019] VCAT 1244

The Site and the Proposal were the subject of a previous planning application (the 'Previous Application') and subsequent Victorian Civil and Administrative Tribunal (the 'Tribunal') decision. The Proposal is generally consistent with that the Tribunal previously considered.

In its decision of 15 August 2019, the Tribunal upheld Council's refusal to grant a planning permit. A copy of this decision is attached at **Appendix A**.

VCAT considered there were six determinative issues in its assessment of the Previous Application being:

- Planning policy support for renewable energy facilities;
- The loss of productive agricultural land;
- Significant landscape values and/or visual impact;
- Hydrological issues such as drainage, runoff and flooding;
- Bushfire management; and
- The adequacy of the information and plans in support of the application, including site layout plans.

The Tribunal found that the first three matters favoured the grant of a planning permit, but that there needed to be greater resolution of the last three matters.

Accordingly, this planning application seeks to 'correct' the deficiencies identified by the Tribunal in relation to the Previous Application.

In the Supreme Court decision of *Zumpano v Banyule City Council [2016] VSC 420*, the established principles for consideration associated with 'correcting' applications were reaffirmed, namely:

- Significant changes in the application itself;
- Changes in the circumstances of the land and its surrounds;
- Changes in planning policy; and/or
- Changes in the interpretation of the facts or law relevant to the Tribunal's consideration.

In response to these principles, there has not been 'significant changes' to the Proposal in the sense that the proposed use and development remains essentially the same. Rather than identifying flaws with the Previous Application as a whole, the Tribunal was concerned with specific aspects (principally hydrology and bushfire management). In relation to these specific aspects, the Proposal constitutes a 'significant change' given the additional reports and assessments which have been undertaken and integrated into the design of the Proposal.

There has not been a material change in the circumstances of the Site and its surrounds in the intervening period between the Tribunal's decision and this new permit application.

The Tribunal issued its decision on 15 August 2019. On 17 September 2019, Amendment VC161 was gazetted which made several relevant changes to the Victorian Planning Provisions being:

- The revamping of Clause 53.13 and the introduction of the *Solar Energy Facilities Design and Development Guideline* as a relevant decision guideline.
- The identification of the Minister for Planning as the responsible authority for renewable energy facilities with an installed capacity of 1 megawatt or greater.
- The introduction of the land use 'solar energy facility' as a subset of 'renewable energy facility'.
- The insertion of Clause 14.02-3S (Protection of declared irrigation districts).

The revisions made to Clause 53.13, the introduction of the *Solar Energy Facilities Design and Development Guideline* (the Guideline) and the insertion of Clause 14.02-3S alter the decision making framework from that previously considered by the Tribunal. These matters are assessed within this report.

It is also relevant that Amendment C52 gazetted on 17 September 2020 replaced the Local Planning Policy Framework of the Corangamite Planning Scheme with a new Municipal Planning Strategy at Clause 02 and modified the Planning Policy Framework at Clauses 11-19.

Lastly, there are no material changes in the interpretation of the facts or law relevant to the consideration of the application, subject to the consideration of Amendment VC161 as outlined above.

When properly read and considered, the issues identified by the Tribunal in relation to the Previous Application were specific matters of detail as opposed to broader concerns. The Tribunal's findings with respect to the earlier application must be acknowledged and be given serious weight in the assessment of this new application. Accordingly, the matters that this new application are principally required to address are:

- Hydrological issues such as drainage, runoff and flooding;
- Bushfire management; and
- The adequacy of the information and plans in support of the application, including site layout plans.

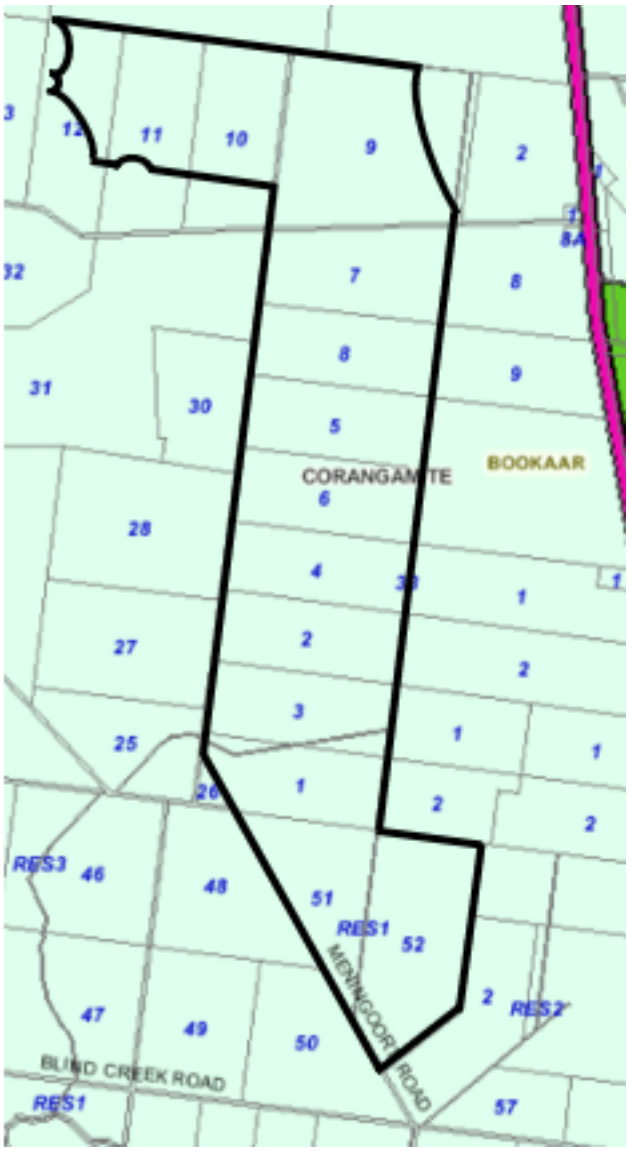
The application has addressed these matters as outlined further within this report and the accompanying material.

1.3 The Corangamite Planning Scheme ('the Scheme')

The Site is zoned Farming Zone.

The Site is not subject to any Planning Overlays and does not extend into any Area of Aboriginal Cultural Heritage Sensitivity or into the Meningoort Victorian Heritage Register entry area.

The Site is within a Designated Bushfire Prone Area. A bushfire hazard assessment is not required for this use pursuant to Clause 13.02-1S (Bushfire planning). Nevertheless, a comprehensive Bushfire Risk Assessment & Mitigation Plan accompanies this application.



Farming Zone overview (Source: VicPlan)

1.4 Planning Permit Requirements

A planning permit is required pursuant to:

- Clause 35.07-1 (Farming Zone) to use land for the purpose of a renewable energy facility.

  Such a facility must meet the requirements of Clause 53.13 (Renewable energy facility (other than wind energy facility)).

- Clause 35.07-4 (Farming Zone) to construct a building and construct and carry out works.

For the avoidance of doubt, planning permission is not required for the display of signage. The signage intended to be displayed is limited solely to that required by the CFA which is considered to be exempt pursuant to Clause 52.05-10.

1.4.1 Responsible Authority

Clause 72.01 (Responsible authority for this planning scheme) identifies the authority responsible for the administration and enforcement of the Scheme.

Pursuant to Clause 72.01-1, the Minister for Planning is the responsible authority for matters relating to the use and development of land for a renewable energy facility with an installed capacity of 1 megawatt or greater.

As identified within the introduction, the Proposal will have an installed capacity of 200 megawatts (AC) (282 megawatts DC). Accordingly, the Minister for Planning is the responsible authority in this matter.

1.4.2 Application requirements

No specific application requirements for this proposed use and development are set out under the Farming Zone. However, as a condition of the land use being permissible under the Farming Zone, the requirements of Clause 53.13 must be met. Pursuant to Clause 53.13-2, a site and context analysis and a design response plan are required as appropriate. Please refer to **Appendix B** for a response to each sub-requirement of this clause.

1.4.3 Decision making framework

Clause 71.02-3 (Integrated decision making) states:

> *Planning and responsible authorities should endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.*

When considering the decision guidelines associated with the relevant planning permit requirements, the key planning considerations are:

- Is the proposal supported by the Municipal Planning Strategy and the Planning Policy Framework?
- Is the proposal consistent with the Purpose of the Farming Zone?
- Is the proposal consistent with the Purpose of Clause 52.13 and particularly the *Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019)*?

- Does the proposal adequately address the matters raised by the Tribunal in relation to the earlier application?
- Does the proposal satisfactorily address other relevant matters for consideration?

2. The Site and Surrounds

2.1 The Site

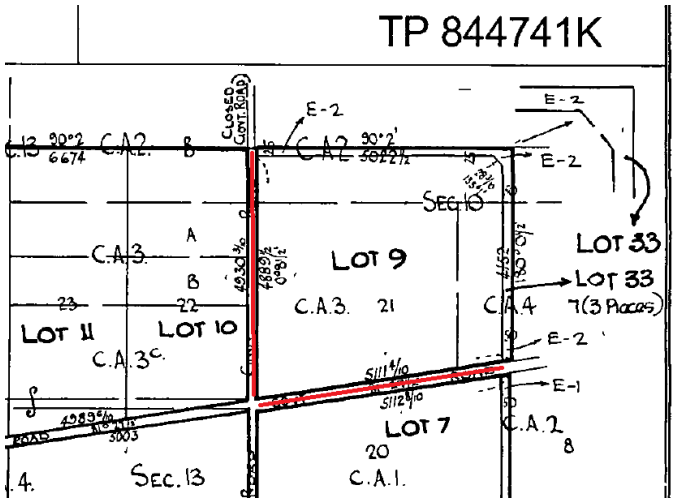
The Site is approximately 588 ha and is defined as 520 Meningoort Road, Lots 51 and 52 and Res 1 on LP4677 and adjacent parts of Meningoort Road, Bookaar. For completeness, the Site consists of the following:

- Lots 1, 2, 3, 4, 5, 6, 7, 8, 9 [part], 10 [part], 11 [part], 12 [part] and 33 [part] on Title Plan 844741K;
- Lots 51, 52 and Res 1 on LP4677; and
- Meningoort Road [Part].

The Certificates of Title indicate that the land is not burdened by any restrictive covenants or Section 173 Agreements.

Title Plan 844741K indicates that two Government Roads cross the Site between Lots 9 and 10 and Lots 7 and 9.

Consent has previously been sought from the Department of Environment, Land, Water and Planning (DELWP) in relation to the use of the two government roads within the Site. The Letter of Advice indicates that a License is already in place which covers the proposed use of the Government Road between Lots 9 and 10. On advice from DELWP, the Proponent has sought permission from the license holder for rights between Lots 9 and 10. Additional permission has been granted to allow the proposed activities (electrical services and access roads) to occur within the Government Road between Lots 7 and 9 without the requirement for a license.



Extract from Title Plan 844741K identifying the two Government Roads (in red) (Source: Certificate of Title)

Approximate aerial overview of project area (black outline) in the context of the immediately surrounding area (Source: Google Earth, 2020)

2.2 Site Description

As described above, the Site is located within two broader landholdings and is predominately used to graze sheep and cattle, except for a section of land in the south-east corner, which is currently used for cropping.

The landholdings are topographically dominated by Mount Meningoort, which is a prominent volcanic cone that sits in its centre. The main homestead, known as 'Meningoort', is situated at the base of Mount Meningoort overlooking the southern extent of the landholding. The homestead includes an adjoining garden and several outbuildings all of which are listed on the Victorian Heritage Register (Ref no. H300).

The homestead is a grand, single-storey, bluestone Italianate-style building which dates back to 1851. It is considered to be of architectural, historical and scientific (horticultural) significance to the State of Victoria. Several more recent dwellings are located within the grounds of the homestead.

The rest of the land within the landholdings is generally flat and comprises improved open pastures and characteristic wind breaks (tree lines) along some fence lines. The topography slopes gently in a southerly direction with a more undulating section of land located in the north west corner.

The Site lies within the Blind Creek Catchment which is a tributary of the Mt Emu Creek Catchment. This catchment generally flows from north to south through a series of mostly artificial drains which have been constructed to drain excess water from the landholdings and the wider area (refer to the 'Flood Impact Assessment'). Two main drains cross the site, the north south drain, and the east west drain as shown on the Site Plan.

A high voltage transmission line suitable for distributing electricity generated by the Proposal transects the area connecting the Terang and the Ballarat substations of the NEM. An 11kV line transects the Site in an east west direction near Meningoort Road.

The Site for the Proposal has been carefully selected within the wider landholdings to avoid sensitive areas identified through technical studies conducted to support this application and to ensure access to the high voltage transmission line. Furthermore, in consultation with the Landowners, the Proponent has selected the land with the lowest agricultural value within the wider landholdings to locate the Proposal, so the most productive areas remain unaffected.

The final location of the Site is shown on the plan titled 'Design Response' and illustrates how the Proposal has been situated outside constraints identified in the wider landholdings. A further explanation of the site selection process is discussed in Section 3.6.

2.3 Surrounding Area

The Site is situated in the local area known as Bookaar[2], approximately 8 km north west of the town of Camperdown (refer to Figure 1 below). The Corangamite Shire is part of the wider South-Western District of Victoria.

Most of the landscape of the South-Western District of Victoria (including the Site and the surrounding area), has been shaped by volcanic activity and is characterised by flat to undulating basaltic plains scattered with volcanic features including numerous volcanic cones (Mt Elephant, Mt Laura, Mt Meningoort) and lakes which together create a unique and important landscape (described in more detail in the accompanying Landscape and Visual Impact Statement). The characteristics of this volcanic landscape, particularly the fertile basalt soils, have made South West Victoria an important area for agricultural production which has shaped the rural landscape experienced today.

The Site and the surrounding area are characterised by agricultural land use including grazing and farming activities. The area is punctuated with scattered farmhouses, sheds, windbreaks (tree lines) and fences that divide the landscape into a board patchwork of distinctive paddocks. In addition, numerous lakes dot the landscape, the closest of which is the Lake Bookaar Wetland Reserve approximately 1.1 km to the east of the Proposal. This is a permanent salt lake which along with eight other wetlands makes up the Western District Lakes Ramsar Site.

[2] *Which is located within the Corangamite Shire*

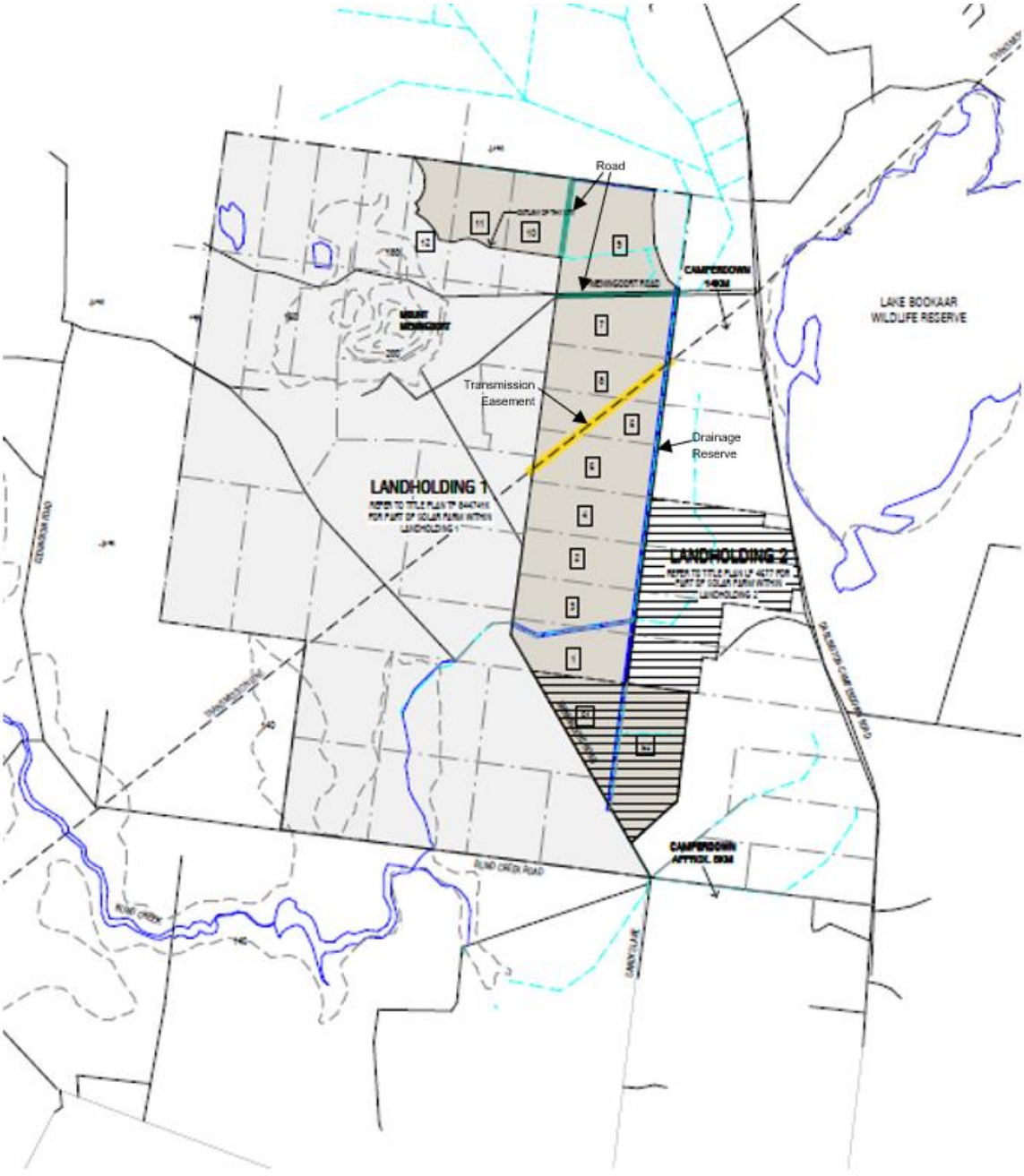


Figure 1: Location Plan (a detailed scale version of this this plan accompanies the Planning Application)

The Darlington-Camperdown Road is located approximately 700 metres to the east of the Proposal and is the main road within the area. Dwellings are typically concentrated along this road.

Figure 2 below shows the location of residential dwellings in the area, and the distance of these properties from the Site. The closest neighboring residential dwelling is 'E' (599 Darlington Road, Bookaar, approximately 450 metres) while dwellings 'M', 'N' and 'R' are the Meningoort Homestead ('M') and associated farmhouse (occupied by the involved landowners) which are approximately 800 metres from the Site. Other dwellings within 1km of the Site are 'K' (approximately 630 metres), 'L' (approximately 840 metres) and 'I' (approximately 890 metres).

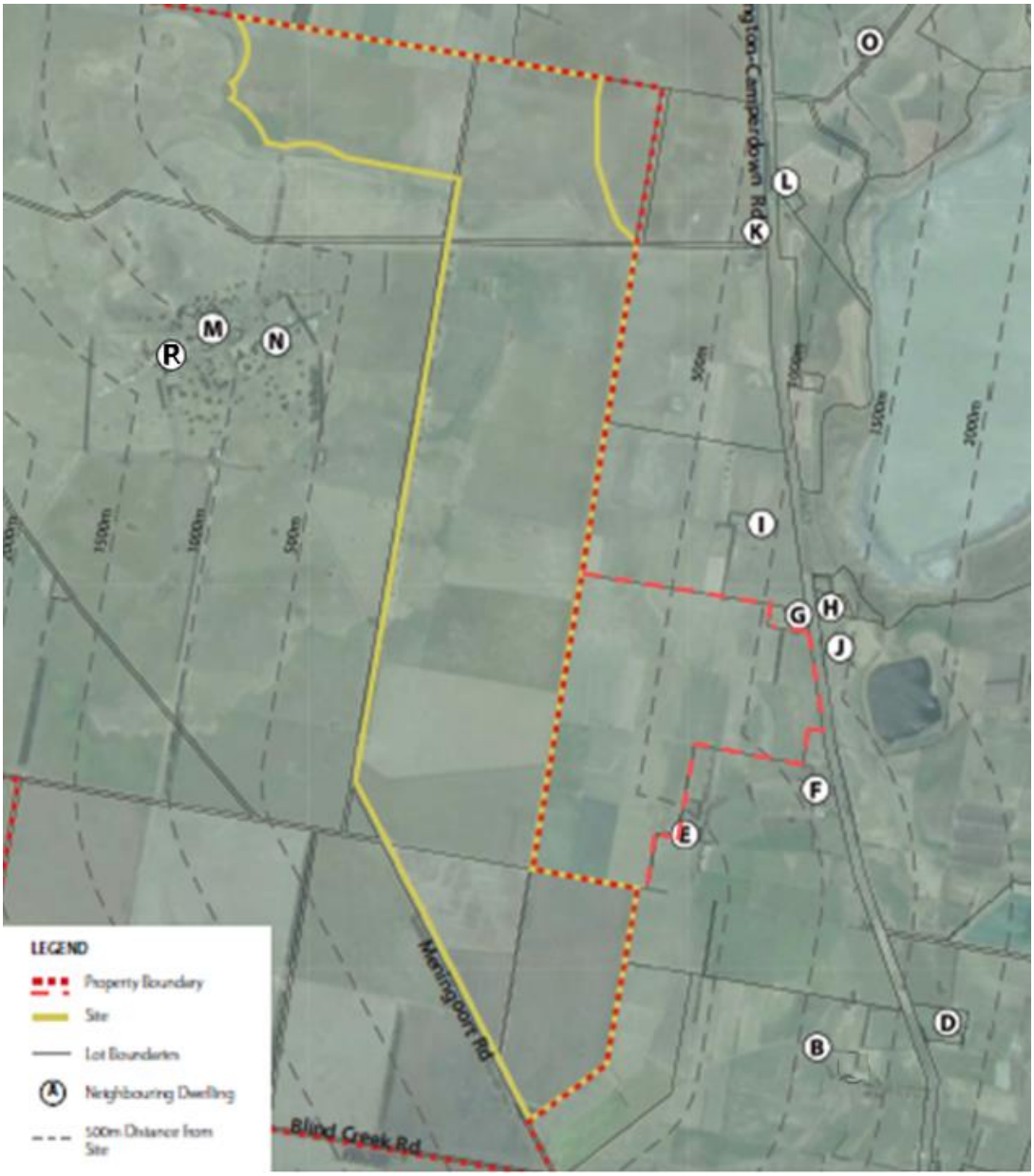


Figure 2: Approximate location of neighbouring dwellings

Note dwellings 'M', 'N' and 'R' are landowner properties.

2.4 Pre-application meeting

On 30 April 2020, a pre-application meeting was held between the Proponent and representatives of the Department of Environment, Land, Water and Planning (Renewables Development Approvals and Design).

At the pre-application meeting, the Previous Application and Tribunal decision were discussed, along with the relevant application requirements, level of consultation required and the general merits of the Proposal.

3. The Proposal

3.1 Key Components of the Proposal

The Proposal involves the installation of a solar energy facility with a capacity of 200 MWac (282 MWdc). The Proposal includes the following elements, as documented on the Site Plan:

- 'Array Areas', containing Photovoltaic (PV) panels mounted on a single axis tracking system with a maximum height of 4 m above natural ground at maximum tilt ('Site Plan Appendix F'). The tracking system would be supported by piles driven into the ground. Row spacing (pile to pile) is either 12.75 m (south of the 220kV transmission line) or 13 m (north of the 220kV transmission line);
- 82 inverters located centrally throughout the Site in pairs at 41 locations across the Site (inverter stations, see 'Site Plan Appendix G'). Inverter stations are located at least 171 metres from the Site boundary;
- Below ground cabling connecting the PV panels between trackers and inverters;
- Below ground cabling connecting the inverters to the substation;
- An internal track network of all-weather gravel tracks (4 m), including a perimeter track which forms part of a 10 m wide defendable Asset Protection Zone (APZ) that surrounds the Site;
- Four (4) gated main site access points via Meningoort Road (north, 'Site Plan Appendix E');
- Four (4) gated emergency access points along the western boundary of the Site;
- Eight dedicated water tanks for firefighting (maximum of 3.6m high), located adjacent to each access point;
- A perimeter security fence 2.5 m high (chain mesh);
- Perimeter vegetation screens (20 m wide with 4 rows of trees and maintained to a height of at least 4 m), planted on the outside of the security fencing;
- Agricultural style fencing 1.2 m high, around the perimeter of the vegetation screens and the perimeter of the existing vegetation on the Site's western boundary;
- A SCADA system that will gather, monitor and analyse data generated through operating the Proposal;

- On-demand, downward facing lighting (restricted to 4m in height); and
- Sensor triggered CCTV security cameras located around the perimeter of the Site and adjacent to key infrastructure.
- Substation Area ('Site Plan, Appendix A') including:
    - Substation connecting the Proposal to the onsite 220KV transmission line, via two (2) new high voltage (HV) 220 kV transmission lines;
    - A Control building (3 m high);
    - Substation Operations and Maintenance building (up to 5 m high);
    - A security fence (chain mesh) up to 2.5 m high, enclosing the Substation;
    - A 10 m wide defendable APZ around the perimeter of the Substation; and
    - Parking for 5 vehicles.
- Battery Area ('Site Plan', Appendices 'A' and 'C')
    - A series of separate containerised battery units, connected by underground cables to the Substation (approximately 2.5 m high);
    - A separate transformer adjacent to each battery; and
    - A 10m defendable APZ around the perimeter of the Battery Area.
- Operations Buildings Area ('Site Plan, Appendix D'):
    - A Site office building including amenities with a height of 3.6 m;
    - A maintenance building and workshop with a height of 5 m;
    - Three storage sheds with a height of 4.1 m;
    - Car parking for twelve (12) vehicles;
    - A septic tank and potable water tank;
    - A defendable APZ of 20 m, which allows the area to function as the nominated 'Shelter in Place' location (see Bushfire Risk Assessment and Mitigation Plan).

In addition to the key components outlined above, there will be a temporary construction compound to facilitate the construction phase of the Proposal. The construction compound would include:

- Temporary construction offices (up to 5 m high);
- Car and bus parking areas for construction vehicles (51 workers cars, 5 mini vans; and additional parking space provided for delivery vehicles and construction machinery);
- Staff amenity block including portable toilets, showers and a kitchen, designed for peak staff numbers during the construction period; and
- Laydown areas.

Once the Proposal is operational, the construction compound will be decommissioned and revegetated.

An existing Powercor 11kV line crosses the Site east west through the north east corner of Lot 7 and the Meningoort Road reserve. As part of the Proposal a section of this line would be buried underground and rerouted to cross Meningoort Road, and then continue westwards immediately to the north of the Meningoort Road reserve ('Site Plan'). An easement for access will be provided. All works and creation of the easement will be to the satisfaction of Powercor, and subject to Powercor's 'Electricity Connection - Industry' process.

A detailed description of the key components of the Proposal is attached at **Appendix C**.

3.2 Indicative Timeline

An indicative timeline for the Proposal is provided in Table 1 below. It is estimated that the Proposal would take approximately 12 months to construct and would be operational for approximately 28 years. Following the operational period, all above ground infrastructure would be removed from Site which would take approximately 12 months. As such, planning permission for the Proposal is sought for 30 years.

Phase	Indicative Start	Indicative Period
Construction	2022	12 months
Operation	2023	~28 years
Decommissioning	2051	12 months

Table 1: Indicative timeframe for project phases

3.3 Construction Phase

Primary Construction Activities

The primary construction activities would be as follows, although the particular order may change:

- Mobilisation; establishment of temporary construction compound and laydown areas;
- Road improvements to Meningoort Road and the intersection of Meningoort Road and Darlington Camperdown Road;
- Planting of the vegetation screens;
- Construction of the internal track network including bridges and culverts;
- Construction of the perimeter security fence and the establishment of the APZs;
- Establishment of the substation;
- Preparation of the array area;
- Installation of piles and the tracking system;
- Securing panels to the tracking system;
- Rehabilitation of any disturbed areas;
- Trench digging and cable laying;
- Installation and connection of inverters;
- Construction of the operations area;
- Removal of temporary construction compound and facilities;
- Rehabilitation of remaining disturbed areas; and
- Solar farm commissioning.

Overall, the environmental impact of solar farm development is low. The Proposal has been located on flat land, in order to minimise ground disturbance. As such, areas that require earthworks are limited to the following:

- The construction of the internal track network, including the installation of 3 culverts over drains within the Site. Note, the internal track network will follow current ground contours and will be constructed at ground level;

- The installation of 2 prefabricated bridges (approximately 4 m x 12 m) across the east-west drain to connect the perimeter access track around the Site. To minimize soil disturbance the prefabricated bridges will arrive in shipping containers and be installed over the drain with the approaches of the bridge in both directions sitting on prefabricated flat concrete slabs placed on Geotech fabric on the ground on each side of the drain. This design avoids the need for subsurface foundations.

- The construction of cable trenches to bury electricity cables and associated communication lines to connect onsite infrastructure (i.e. connecting the tracker infrastructure to the inverter stations, the inverter stations to the substation, and between the substation and the battery area). Where underground cables are proposed to cross onsite drains, a horizontal bore will be used to install the cables underground and to ensure that drain infrastructure is not disturbed;

- The construction of a cable trench to reroute an existing 11kV distribution line underground where it crosses the Site;

- Land will be graded to form a flat and stable surface under the Operations Buildings Area, Substation Area, Battery Area and the Temporary Construction Compound;

- An existing farm dam located adjacent to Meningoort Road (north), will be filled to allow panel infrastructure to be constructed in this location; and

- Improvements to Meningoort Road (north) and the intersection of Meningoort Road and the Darlington Camperdown Road.

In addition, there may also be a requirement for minor localised earthworks associated with the installation of the tracker infrastructure, although a desktop analysis indicates that this is unlikely due to the flat topography of the Site.

Construction hours

It is anticipated that the Proposal would take approximately 12 months to construct. Construction work will be undertaken within the following hours:

- Monday to Friday, 7am to 6pm; and

- Saturday, 8am to 5pm.

However, only low noise activities would be undertaken at the Site between 1pm and 5pm on Saturdays. Activities that would not occur during these hours would include any Heavy Goods Vehicle movements, and the improvement works to Meningoort Road (north) and the intersection of Meningoort Road and the Darlington Camperdown Road.

Any construction activities outside these hours would only be undertaken with the permission of relevant authorities and the notification of neighbours.

Construction resource requirements

Resource requirements and their likely sources are shown in the Table 2 below. As far as possible local resources will be used for the construction of the Proposal.

Resource	Detail	Likely Source
Plant and Machinery	Pile drivers, mobile crane, diesel generators, earth moving and concreting equipment for Substation and support buildings.	Wider Victoria for larger equipment; local where possible.
Materials and equipment	Steel, gravel, sand, tubestock seedlings for the vegetation screens, cables, solar panels, inverters, transformers and other substation equipment, batteries.	Gravel, sand, and landscaping equipment will be sourced locally where possible (see the 'Traffic Impact Assessment'); some materials and equipment, like solar panels inverters and transformers are manufactured overseas.
Labour	Variety of positions required depending on construction activity.	National and local contracting staff.
Accommodation	Accommodation for workers.	Camperdown, Cobden, Terang and smaller rural areas around the Site. Further accommodation is available in Mortlake and Colac.

Table 2: Resource requirements and sources for the Proposal

3.4 Operational Activities

The operational period is expected to begin in early 2022. Operational activities include:

- Monitoring of solar production – analysis of data;
- Export of solar energy to the national electricity network;
- Maintenance of all plant and equipment – visual inspections and/or engineering work as required, analysis of data; replacement of equipment as required;
- Security – remotely and through routine site inspections;
- Annual maintenance and preparation activities required to comply with the Bushfire Mitigation Operational Schedule;

- Vegetation monitoring and management – routine vegetation management and monitoring in panel areas (small livestock may be permitted to graze within panel areas, for example sheep) and within the landscape screens;
- Erosion monitoring – routine monitoring for scouring beneath the panels and along access tracks and waterways. Fences and drains will be checked and unblocked as required; and
- Any other activities that may be required as a condition of consent.

During the operational period there would be approximately six full time equivalent (locally based) staff who would routinely visit the solar farm to carry out activities as listed above. Travel would be in standard 4x4 vehicles. Should there be a requirement for major maintenance works larger trucks and equipment may need to be deployed.

3.5 Decommissioning

During decommissioning all above ground infrastructure would be removed to a level of at least 0.5 metres below the surface and the Site restored to its pre-development state.

Main activities include:

- Disconnection from the 220 kV Substation;
- Dismantling of the Substation and support buildings;
- Removal of the solar panels, tracking systems, inverters and cables;
- Removal of onsite tracks, bridges and fences unless agreed otherwise with the landowner; and
- Reinstatement of all disturbed ground.

It is anticipated that decommissioning would take up to 12 months. Impacts would generally be similar in effect to those experienced during construction. Decommissioning and rehabilitation would be governed by a stage specific Environmental Management Plan (EMP).

Recycling of panels and other equipment is considered in Section 2.5 of the Amenity Report.

3.6 Design

3.6.1 Site selection

The following site selection criteria were considered in the identification of suitable development site for the Proposal (in no particular order):

- Solar irradiation;
- Access to the existing road network;
- Access to the electricity network;
- Potential capacity of the local transmission/distribution lines;
- Topography and key landscape features;
- Minimal environmental constraints / impact;
- Compatible existing land uses;
- Access to suppliers and materials;
- Proximity to residential settlement; and
- Landowner support.

The Proponent has reviewed the Site in light of the selection criteria outlined above and determined that the proposed location represents a feasible opportunity for solar development. The Site was selected primarily because it is an appropriate site with respect to topography, its proximity to existing transmission lines with capacity to export generation, compatible existing land use, and few surrounding environmental receptors.

3.6.2 Design principles

The proposed Site was selected due to its suitability for a solar farm and the limited nature of the constraints identified. In designing and addressing the potential impacts of the Proposal, the following design hierarchy was adopted:

- **Avoid** – in the first instance, all efforts have been made to avoid potential environmental impacts;
- **Minimise** – where potential impacts cannot be avoided, design principles seek to minimise environmental impacts, as far as feasibly possible;

- **Mitigate** – mitigation strategies will be identified and implemented to manage the extent and severity of remaining environmental impacts; and

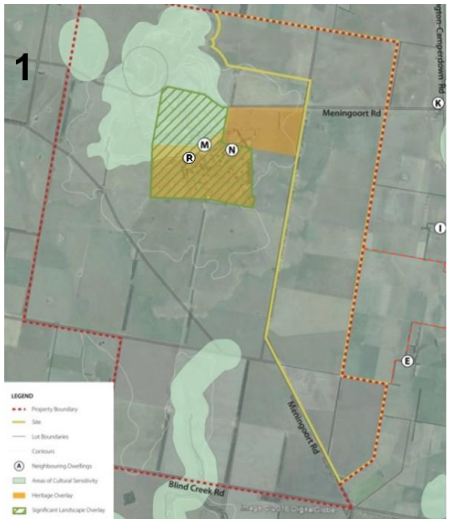
In addition, the following specific principles were adopted:

- Minimise vegetation clearing – areas of high conservation value and/or native vegetation have been strategically avoided;
- Use previously disturbed land – the Proposal has been located on previously cultivated or disturbed land;
- Protect cultural heritage values – through the identification and evaluation of cultural heritage values at the Site;
- Protect agricultural values – existing agricultural values shall be preserved and a negotiated lease shall offset forgone landholder income while diversifying income for the duration of the Proposal life;
- Minimise direct and indirect impacts – as far as possible, infrastructure has been located away from sensitive receivers; and
- Adopt a flexible approach to design – the final Proposal design responds to identified environmental impacts and constraints.

3.6.3 Design Process

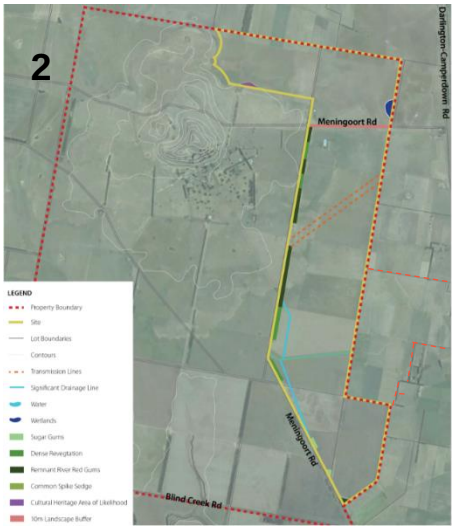
The Proposal has been located and designed in response to the surrounding environment in line with the design principles outlined above. The Proposal has been refined in response to detailed assessments, the findings of the Tribunal regarding the Previous Application at the Site, and in light of the new Guideline.

Stage 1 of the design process involved an assessment of the general area to identify potential opportunities and constraints in order to identify a suitable area to locate a solar energy facility. Once a suitable location was determined, the area was assessed in detail against a full range of disciplines (Stage 2) to confirm the suitability of the Site and refine the design in response to the assessments. Stage 3 then assessed the potential offsite impacts of the design and made further adjustments to ensure the design minimized any potential offsite impacts. The design process is explained in more detail in Figure 3 below.



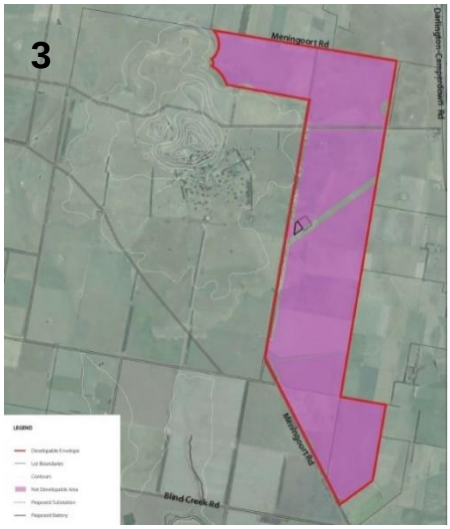
Stage 1 identified known constraints and areas of sensitivity in the broader landholdings and surrounds. This process led to the establishment of the 'Site' and included consideration of:

- Agricultural land;
- Planning Overlays (Heritage Overlay and Significant Landscape Overlay);
- Areas of Aboriginal cultural heritage sensitivity;
- Location of residential dwellings and towns;
- The location of grid infrastructure which might facilitate onsite connection;
- Access to local roads capable of supporting construction traffic;
- Suitability of topography; and
- Location of wetlands and major water courses



Stage 2 included detailed assessments of the constraints identified within the Site boundary, including:

- Aboriginal areas of likelihood;
- Wetlands, farm dam, and the drainage network;
- Native vegetation;
- Other vegetation and Ecology;
- Access;
- Potential Historical Heritage and Cultural Heritage;
- Existing infrastructure within the Site; and
- Consultation



Stage 3. As a Consequence of stages 1 and 2, a net developable area was identified. This area was then assessed further to ensure that the Proposal and in particular, infrastructure placement would not result in unacceptable offsite environmental impacts. This included the assessment of potential:

- Landscape impacts;
- Glint and Glare impacts;
- Hydrology impacts;
- Heritage impacts and
- Amenity impacts.

Figure 3: Design process Stages 1 to 3

The design of the solar farm that resulted as a consequence of the design process outlined above, was submitted as the Previous Application to the Corangamite Shire Council in July 2018. However, the design was further modified after submission in response to an update to the *Aboriginal Heritage Regulations* which identified a new area of Aboriginal Cultural Heritage Sensitivity within the proposed Site. Consequently, and in line with the design principals adopted, this additional area of Aboriginal Cultural Heritage Sensitivity was excluded from the Site to avoid any potential impacts to the area as shown in Figure 4 below.

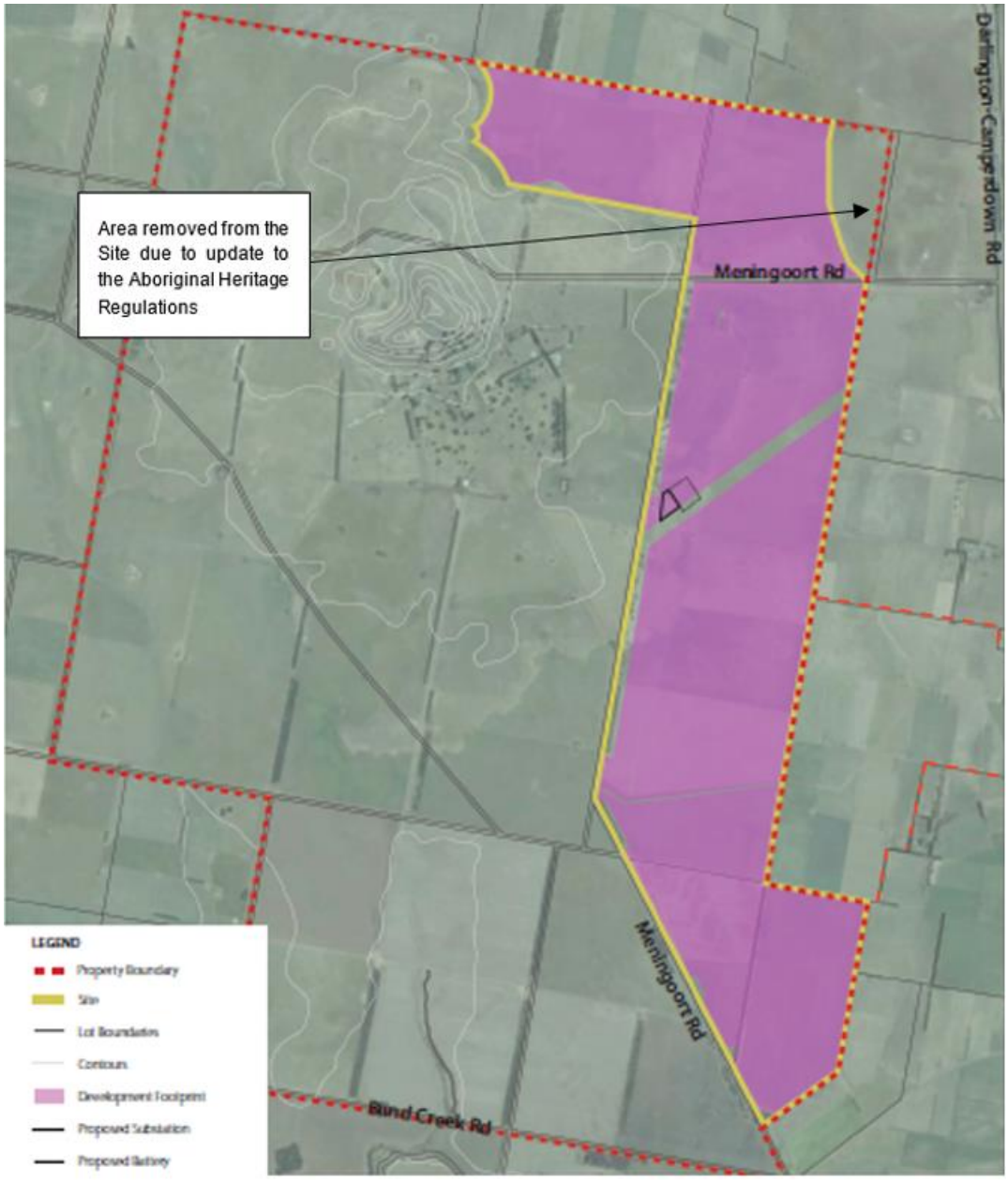


Figure 4: Final Site boundary – 'Previous Application' - modified to reflect changes under the *Aboriginal Heritage Regulations*

The Previous Application was refused a planning permit by the Corangamite Shire and subsequently the Tribunal. The Tribunal found that the Previous Application required greater resolution regarding:

- Drainage, runoff and flooding;
- Bushfire management; and
- The plans in support of the application, including site layout plans.

Accordingly, the new Proposal seeks to 'correct' the deficiencies identified by the Tribunal in relation to the Previous Application.

An assessment of the Tribunal's decision indicates that the site selected for the Previous Application was suitable for a solar energy facility as long as it could be determined that the design would not adversely impact flooding, drainage or runoff in the area and that an assessment of bushfire risk should inform the design and layout of the solar energy facility. As such, Stage 4 of the design process re-examined the Site and surrounds with the benefit of an additional detailed flood impact assessment and a bushfire risk assessment (the latter assessment also included a Peat investigation of the Site). As part of this process a review of the planning scheme was undertaken and consideration was given to the Guideline.

A re-examination of the Site identified minor 'flood constraints' that would need to be avoided in the placement of key infrastructure ('Flood Impact Assessment') within the Site. The Peat Assessment, as part of the Bushfire Risk Assessment did not identify peat within the Site, consequently, specific mitigation strategies to address peat and any associated bushfire risk are not required.

Further, in response to safety concerns raised by the community regarding the access route along Blind Creek Road and Meningoort Road for the Previous Application (note, these concerns were not upheld by the Tribunal decision), and the extensive upgrades the Council requested to facilitate traffic along this route, a further Traffic Impact Assessment was commissioned to determine if there was a more suitable route that would avoid Blind Creek Road, around which most of the concerns were raised and significant upgrades were required which had the potential to impact local ecology and drainage in the area. The assessment identified an alternative route that would avoid Blind Creek Road and allow traffic for the Proposal to access the Site directly from Meningoort Road (north) where it crosses the Site, via the Darlington Camperdown Road which is the main road in the area and approximately 700 m from the Site. The Traffic Impact Assessment provides a full assessment of the new access arrangements. The new access route requires the following improvements:

- Upgrading of Meningoort Road between Darlington-Camperdown Road and the western boundary of the Site as a typical 7.0 metre wide carriageway with a compacted gravel surface;
- Construction of a channelised left-turn lane from Darlington-Camperdown Road into Meningoort Road; and
- Sealing the first 30m section of Meningoort Road (north) to facilitate turning movements of heavy vehicles into and out of Meningoort Road (north).

To ensure that the proposed new access route is suitable the Flood Impact Assessment and the Biodiversity Assessment have been extended to include all areas of the route that require improvements as identified above. The proposed upgrades have been designed to ensure overland flows and drainage will not be altered in the areas surrounding the upgrades and that impacts to native vegetation have been strategically avoided.

Figure 5 below shows all the constraints identified within the Site and the surrounding area as part of the design process for the Proposal.

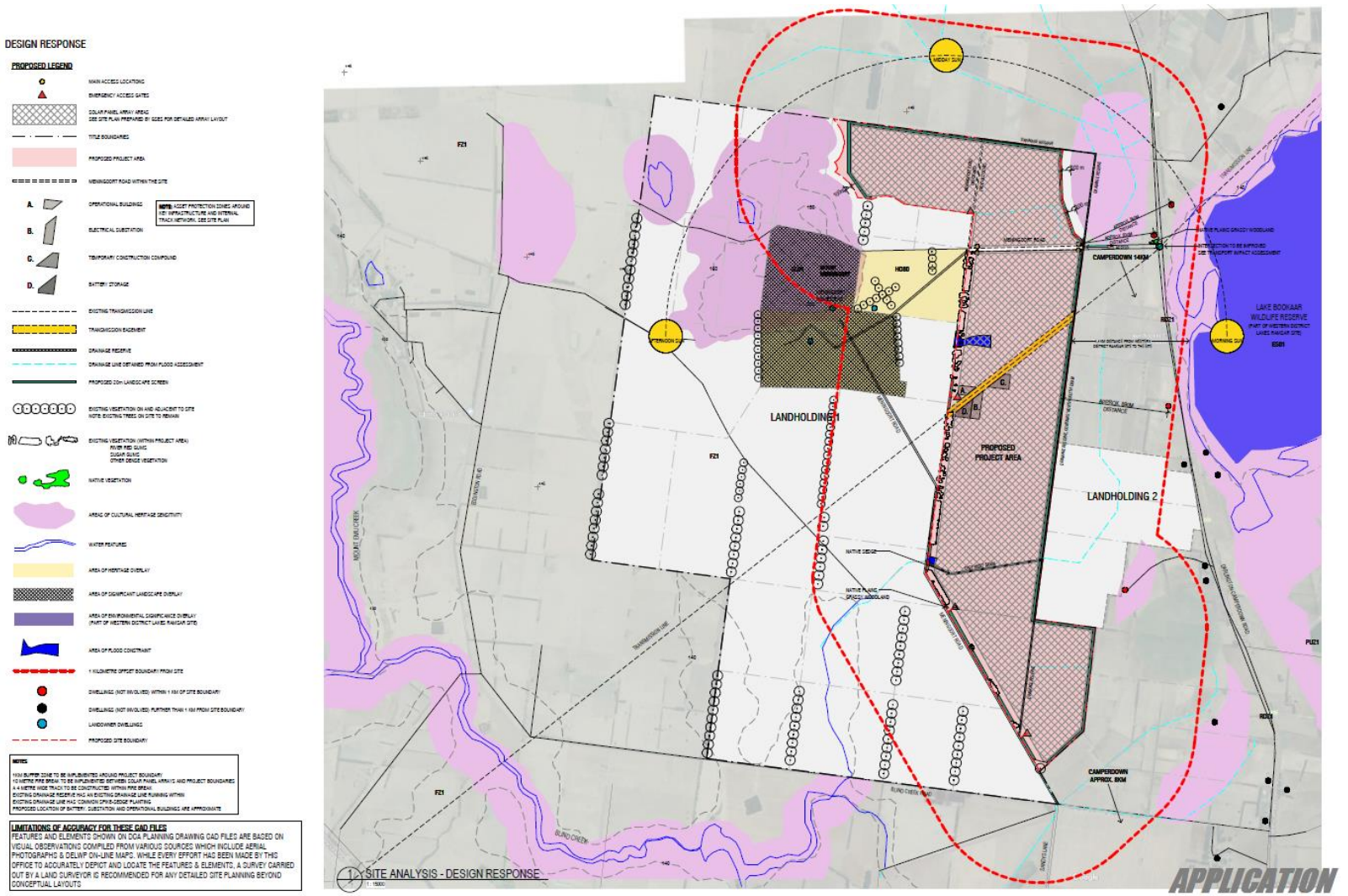


Figure 5: The 'Design response': detailing constraints identified as part of the assessment of the Proposal (Stage 4) (a detailed scale version of this this plan accompanies the Planning Application).

The final design of the Proposal (Stage 5) was based around avoiding the constraints identified by the extensive assessments conducted to support the planning application and illustrated on the figure above. The design process was an iterative process that tested and modified the final design to ensure that the Proposal would not result in any unacceptable onsite or offsite impacts.

This included the assessment of potential:

- Landscape impacts;
- Glint and Glare impacts;
- Flood impacts;
- Bushfire impacts;
- Biodiversity impacts;
- Heritage impacts and
- Amenity impacts.

The final design is a culmination of the design process and is shown in Figure 6 below. A Scale version of the design is provided as the ‘Site Plan’.

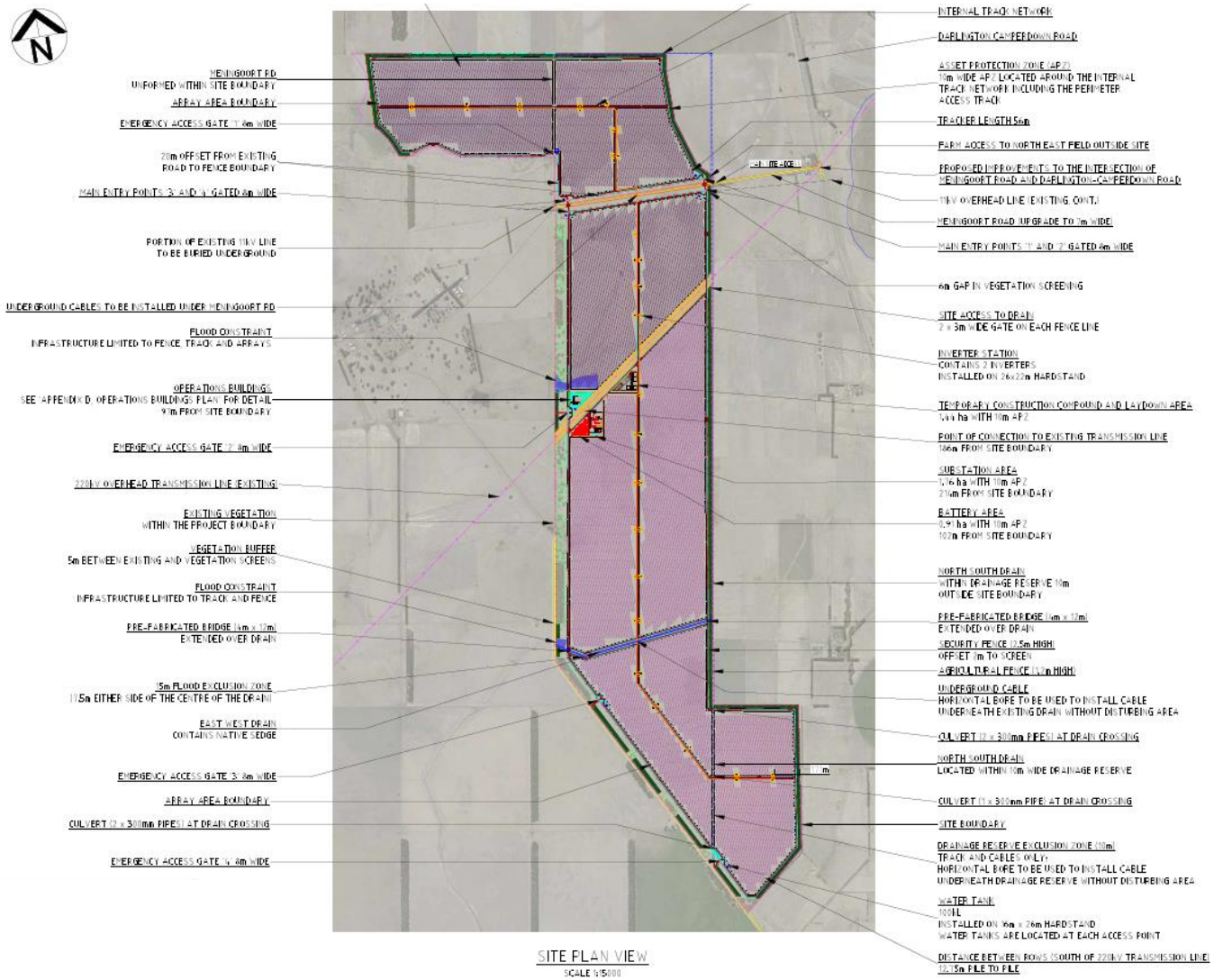


Figure 6: Site Plan

3.7 Changes between the Previous Application and the Proposal

Due to the additional assessments of hydrology and bushfire, and through consideration of the findings of the Tribunal decision, some minor changes have been made to the design of the Proposal when compared to the Previous Application as listed below.

- The location of the substation, battery and operations buildings have been rearranged to avoid an area of flooding during large flood events (1% AEP). These elements remain in the same general location, on the western boundary of the Site, adjacent to the transmission line that will export electricity from the Proposal.
- The main access route for the Proposal has been rerouted in response to safety concerns raised by the local community at VCAT regarding the original access route for the Previous Application which accessed the Site from Meningoort Road via Blind Creek Road. Access is now proposed via the Darlington Camperdown Road (the main road in the area) and onto the northern part of Meningoort Road which crosses the Site.
- Two culvert crossings over the east west drain have been replaced with bridges in order to avoid disturbing native vegetation identified within the drain (the Common Spike-sedge Eleochaeris acuta).
- Inter row spacing of the tracking system has been adjusted from 12 metres to be 12.75 metres (south of the 220kV transmission line) and 13 metres (north of the 220kV transmission line).
- The overall number of Access Points has been increased from five to eight in response to the bushfire assessment.
- The number of water tanks for fire prevention has been increased from one to eight in response to the bushfire assessment.

In summary however, the Proposal remains a design for a 200MWac solar farm of the same dimensions and characteristics located within the design envelope of the Previous Application as can be appreciated by comparing Figures 6 (above) and 7 (below).

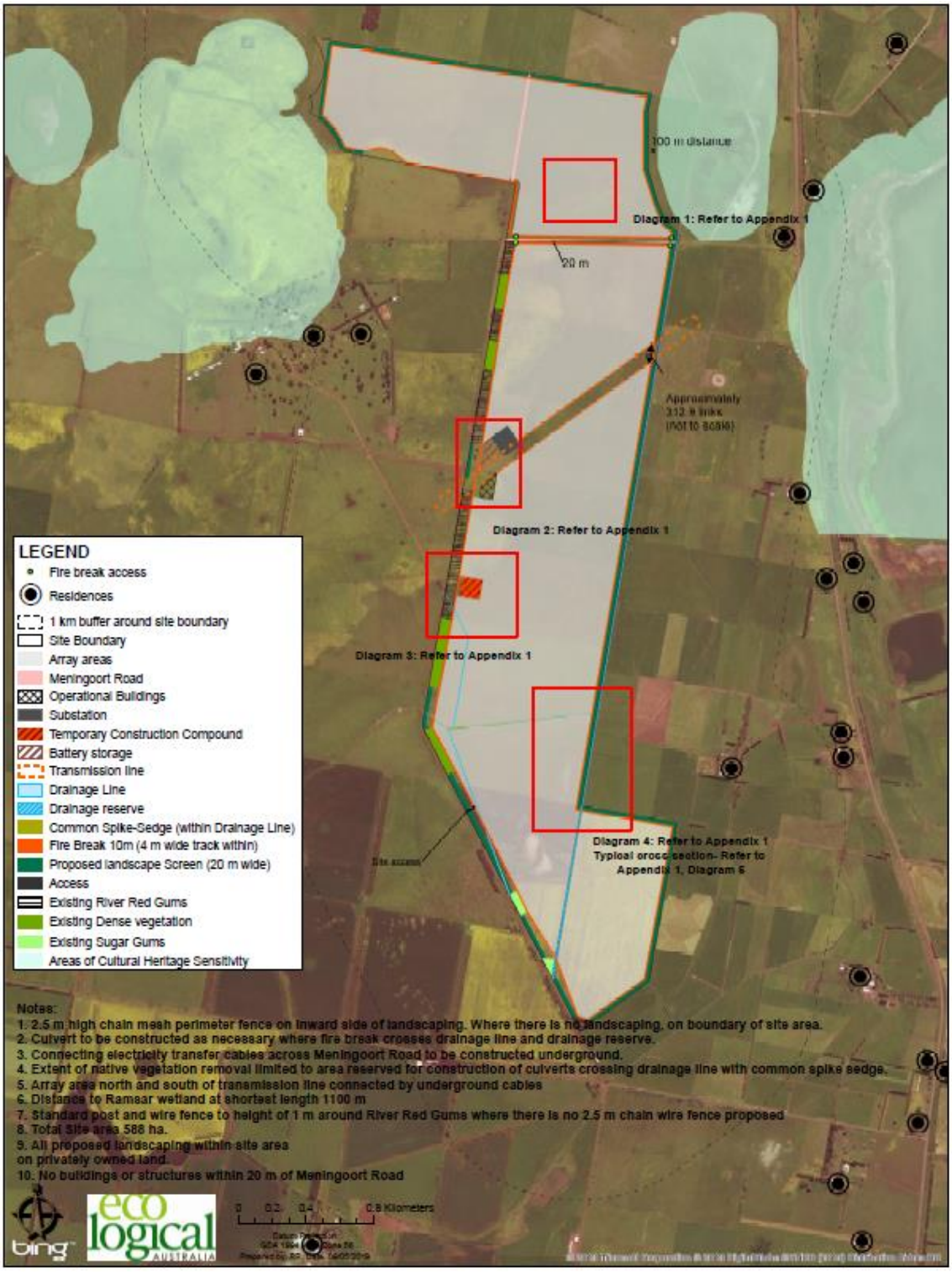


Figure 7: The Previous Application (Amended Plan – Victorian Civil and Administrative Tribunal)

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4. Planning Assessment

4.1 Is the Proposal supported by the Municipal Planning Strategy and the Planning Policy Framework?

Before examining the Municipal Planning Strategy and Planning Policy Framework, it is first worth recognising the higher order policy support for renewable energy that sits outside the Scheme.

At a Federal Government level, Australia has a Large-Scale Renewable Energy Target (RET) of 33,000 Gigawatt hours by 2020 from large scale generators (DEE, 2019[3]). While this target has recently been achieved (and current political commentary suggests that it will not be extended), Federal Government bodies (e.g. the Australian Renewable Energy Agency and the Clean Energy Finance Corporation) are still specifically targeting the development of solar energy facilities due to Australia's natural advantages when it comes to solar availability.

At a State Government level, Victoria has renewable energy targets of 25 per cent by 2020, 40 per cent by 2025 and 50 per cent by 2030[4]. Like the Federal level, the 2020 target is considered to have been achieved, however, further renewable energy projects will be required to achieve the 2025 and 2030 targets.

There is strong policy support, particularly at the State level for the generation of additional renewable energy.

Given this broader policy support for renewable energy, it is unsurprising that the Planning Policy Framework and Municipal Planning Strategy both strongly support appropriately designed and sited renewable energy installations.

The following clauses of the Planning Scheme will help to implement the State Government's renewable energy targets:

- Clause 15.02-1S (Energy and resource efficiency) – which seeks to encourage land use and development that is energy and resource efficient in part through greater use of renewable energy.

[3] Department of Environment and Energy (DEE). (2019). *The Renewable Energy Target (RET) scheme*. Retrieved from http://www.environment.gov.au/climate-change/government/renewable-energy-target-scheme.

[4] *Renewable Energy (Jobs and Investment) Amendment Bill 2019.*

- Clause 19.01-1S (Energy supply) – which seeks to support a transition to a low-carbon economy through renewable energy as part of the facilitation of energy supply infrastructure.

Clause 19.01-2S (Renewable energy), provides the primary higher order planning policy associated with renewable energy.

The objective of this clause is:

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

Strategies associated with this objective include:

- *Facilitate renewable energy development in appropriate locations.*
- *Develop appropriate infrastructure to meet community demand for energy services.*
- *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.*

Clause 19.01-2R (Renewable energy – Great South Coast) expands upon this at a regional level by seeking to *plan for and sustainably manage the cumulative impacts of alternative energy development.*

The *Great South Coast Regional Growth Plan (2014)* (a relevant policy document) has five strategic directions related to economic growth, connectivity, natural assets, communities, and collaboration. In relation to economic growth, new and renewable energy industries are considered to represent a *major opportunity for the region*.

In considering the above, and particularly Clause 19.01-2S, State and Regional planning policy not only supports but actively promotes the installation of new renewable energy facilities, subject to consideration of siting and design.

This Planning Policy Framework Support for renewable energy facilities flows into the Municipal Planning Strategy.

Clause 02.03-9 (Infrastructure) recognises that the municipality is *well placed to take advantage of new renewable energy industries*. In recognition of this, it is in part sought to:

> *Facilitate the establishment and expansion of renewable energy facilities while managing the impacts on amenity, roads and environment.*

Given this strong policy support for renewable energy facilities, it is unsurprising that the Tribunal, when considering the Previous Application at the Site, found the Scheme, at the time of the Hearing, to be strongly supportive of the principle of the establishment of a new renewable energy facility.

However, as the Tribunal commented at paragraph 381, *planning policy support for a renewable energy facility is not unconstrained, and does not trump other important considerations*. Other considerations include, site suitability, loss of agricultural land and visual/ landscape impact. These matters are considered in the subsequent sections of this report. Subject to consideration of these matters, it is concluded however, that the Planning Policy Framework and Municipal Planning Strategy strongly supports the use and development of the Proposal on the Site.

4.2 Is the proposal consistent with the Purpose of the Farming Zone?

The Purpose of the Farming Zone is in part:

- *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 use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*

As discussed in the preceding section, the Planning Policy Framework and Municipal Planning Strategy are supportive in principle of the Proposal on the Site.

The second, third and fourth bullet points all relate to ensuring agriculture is the dominant land use and that any non-agricultural proposals do not adversely impact the ability for agricultural uses to occur in the Farming Zone.

The objective of Clause 14.01-1-1S (Protection of agricultural land) is:

> *To protect the state's agricultural base by preserving productive farmland.*

Strategies to assist in the achievement of this objective 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.*

The Proposal is consistent with these strategies and overarching objective as the accompanying Agricultural Land Report also helps to demonstrate.

The Agricultural Land Report identifies that the Site is currently used for a combination of beef and crop production, which is considered an appropriate use from an agricultural perspective.

The productive capacity of the Site has been assessed based on the Site's current use for beef and crop production. The carrying capacity of the area of the Site used for beef production has been estimated at 12 Dry Sheep equivalents (DSE) per hectare. While the productivity of the southern section of the Site used for dryland cropping has an estimated production potential of 3.65 tonnes per hectare.

The Agricultural Land Report finds that the loss to the agricultural sector as a consequence of removing the Site (which represents 0.15% of the Corangamite Shire's agricultural land), from agricultural production is considered to be insignificant at both the regional and State level. Looking specifically at the enterprises, the loss represents 0.17% of the value of the Shire's beef production and 0.19% of the value of the Shire's wheat production.

The agricultural assessment concludes that in relation to avoiding the loss of high-value agricultural land as defined by the Guideline, the Site is not considered to be 'strategically important' agricultural land and as such, is deemed suitable for use for the Proposal.

This finding is consistent with Clause 02.04 (Strategic Framework Plans), which the Tribunal commented upon in relation to the Previous Application as follows:

> *90. The Strategic Framework Plan sets out key strategic directions for future land use planning and development. The purpose is, among other things, to identify locations where specific land use outcomes will be supported and promoted. The plan identifies the "Premier Agricultural Region of Victoria" to the south and south-west of Cobden east of Timboon and north of Simpson. This is consistent with the major strategic issues identified on the Strategic Land Use Framework Plan that include:*
>
> *The location of high quality agricultural land within the Timboon, Cobden and Simpson areas which is used for dairying, the need to protect this land from inappropriate development.*
>
> *91 This does not mean there is no other valuable and productive agricultural land, as is well documented in the scheme. However, it is relevant that the subject land is not within the mapped area nor within the Timboon, Cobden and Simpson areas that is identified is of particular strategic significance by the scheme.*
>
> *108. We have considered the agricultural qualities of the land, such as soil quality, access to water, and access to rural infrastructure. We do not find that the subject land is poor quality. Nor do we find that it is very high quality agricultural land.*
>
> *110. Notwithstanding that there would be ways to add value, contemplate niche industries, and possibly use the land for dairying, the agricultural attributes, and potential, ascribed to the subject land do not persuade us that the land is of such significance that it should be precluded from consideration for a renewable energy facility, as a matter of principle.*

Further, the Site will not be permanently removed from use for agricultural purposes and instead will be capable for being returned to agricultural use once decommissioning of the Proposal is complete. This was again confirmed by the Tribunal in relation to the previous application, with the Tribunal commenting:

> *117. We further note that neither of the agricultural experts believe that, on decommissioning, the subject land would not be unsuitable for agriculture or that the soil quality will be harmed.*

With respect to the potential impact on agricultural land within the broader landholding and surrounding area generally, this was considered by the Tribunal as part of the Previous Application at paragraphs 118 – 129. Notably the Tribunal adopted the broad position that other Tribunal's and Planning Panels have accepted that *in most rural areas, renewable energy generation, such as solar energy facilities, can effectively coexist with agricultural production*. After reviewing the Site in detail, the Tribunal confirmed *we are not persuaded that the proposal would adversely affect other agricultural enterprises and operations*.

At a local level Clause 14.01-1L (Protection of agricultural land) contains two relevant strategies being:

> *Minimise conflict between agricultural and non-agricultural land uses in rural areas.*
>
> *Avoid non-agricultural land use and development in rural areas that prejudices the productive use of agricultural land.*

This is reflective of the Municipal Planning Strategy and particularly Clause 02.03-4 (Natural resource management).

Again the findings of the Tribunal in relation to the Previous Application are relied upon with respect to the ability for the Proposal to exist alongside agricultural land uses and that the Proposal would not adversely affect the productive use of neighbouring agricultural land.

The temporary loss of a portion of the landholdings for agricultural purposes is therefore acceptable, given the Site is not strategically important agricultural land and the extent of agricultural production loss at both the local and regional level is minimal.

The extent of temporary loss must also be considered in the context of 'net community benefit'. Clearly when comparing a loss of less than 0.2% of the Shire's agricultural land/ beef and wheat production, to the powering of 92,000 dwellings annually/ the offset of approximately 519,000 tonnes of carbon dioxide emissions annually, the 'net community benefit' sits firmly with the use of the Site for the Proposal.

The last Purpose of the Farming Zone relates to encouraging comprehensive and sustainable land management practices and infrastructure provision.

As outlined, the Proposal has a lifespan of 30 years with the final year being dedicated to the decommissioning of the Proposal and returning the Site to its previous agricultural state.

Regarding sustainable land management practices, the use of the existing 220kV transmission line which traverses the subject site avoids the need to develop additional offsite transmission infrastructure to connect the Proposal to the existing transmission network. Thus, minimising the loss of agricultural land and the potential for further offsite amenity impacts while optimising the use of existing infrastructure within the Municipality.

There will, however, need to be improvements to the local road network and these are identified in the accompanying Traffic Impact Assessment prepared by Ratio Consultants. Such improvements are proposed to occur to Meningoort Road (north), and the intersection of Meningoort Road with Darlington-Camperdown Road and are identified as:

- Upgrading of Meningoort Road (north) between Darlington-Camperdown Road and the western boundary of the Site as a typical 7.0 metre wide gravel carriageway;
- Construction of a channelised left-turn lane from Darlington-Camperdown Road into Meningoort Road; and
- Sealing the first 30m section of Meningoort Road (north) to facilitate turning movements of heavy vehicles into and out of Meningoort Road (north).

Minor drainage infrastructure is also proposed in the form of culverts under access tracks where they cross drainage lines to allow water to drain unimpeded over the Site. In two locations over the east west drain, prefabricated bridges have been proposed instead of culverts in order to avoid disturbing native vegetation identified within the drain (the Common Spike-sedge Eleochaeris acuta). The location of the culverts and bridges are provided on the Site Plan and discussed in the Flood Impact Assessment that accompanies this application.

Based on the discussion above, the Proposal includes appropriate infrastructure provision without impacting on the sustainable use of the land in the long term and which will result in an overall net community benefit.

4.3 Is the Proposal consistent with the Purpose of Clause 52.13 and particularly the *Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019)*?

Under the Farming Zone, 'renewable energy facility (other than wind energy facility)', is a Section 2 permit required land use with a condition that it must meet the requirements of Clause 53.13. The relevant requirements of Clause 53.13 are for a site and context analysis and design response to be provided. The Site/ Context Analysis and Design Response Plans prepared by DCA Design fulfill these requirements as outlined at **Appendix B**.

The design response is clearly tailored to the site context, with the Proposal located outside any area of Aboriginal/ European heritage, avoiding any significant landscape areas and being suitably arranged to minimise visibility from surrounding viewpoints (as well as manage other issues such as flood and bushfire risk). The manner in which the design has responded to the site context is clearly set out at Section 3 of this report.

More broadly, Clause 53.13 has as its Purpose:

> *To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area.*

The decision guidelines associated with this clause include:

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.*
- *The impact of the proposal on significant views, including visual corridors and sightlines.*
- *The impact of the proposal on strategically important agricultural land, particularly within declared irrigation districts.*
- *The impact of the proposal on the natural environment and natural systems.*
- *The impact of the proposal on the road network.*
- *Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019).*

This report has previously considered the Planning Policy Framework and Municipal Planning Strategy, as well as the potential impact on agricultural land by the Proposal and the improvements required to the local road network.

With respect to the remaining decision guidelines, the Guideline covers and provides appropriate guidance in relation to these considerations.

Given the relevance of the Guideline to this application it is intended to provide a comprehensive assessment of the proposal against the Guideline.

The purpose of the Guideline is to:

> *Guide the development of, and assist in the granting of a permit for, ground-mounted photovoltaic (PV) solar structures the main purpose of which is to export electricity generated onsite to the National Electricity Market (NEM), either directly or via battery storage.*

The Guideline is directed at the most-common type of large -scale solar energy facility, such as that proposed, which involve:

> *Ground-mounted PV solar panel arrays to generate electricity by converting sunlight directly into electricity. Panels are laid out in groups, called pods or zones, which are connected to inverters that convert the direct current electricity the panels generate into alternating current. The electricity is then either stored onsite in batteries or fed straight into the national electricity transmission network.*

The Guideline under 'Identifying suitable locations' provides seven areas for consideration in determining a good location for a solar energy facility. A response to each area of consideration is provided in Table 3 below.

Ideal siting locations	The Site selection process is discussed in detail in Section 3.7.1 of this report. As previously identified, the proposed Site is not within a declared irrigation district and the land does not represent strategically important agricultural land (See the 'Agricultural Land Report'). The Guideline states that a solar energy facility should not lead to: ▪ the loss or interruption of supply to the immediate or broader electricity transmission network. The Proposal will be required to connect and operate under the NEM electricity rules and as such will not adversely affect the electricity network in the area. ▪ the loss of vegetation, habitat or species of environmental importance. The Proposal has been designed to avoid the loss of vegetation, habitat and species of environmental importance (the 'Biodiversity Assessment'). ▪ the loss of cultural heritage or landscape values of significance.

Again, the Proposal has been carefully located to avoid the heritage overlay and the landscape overlay that exist in the broader landholdings around the Site. Areas of Aboriginal Cultural Sensitivity as identified under the Victorian Aboriginal Heritage Register have also been avoided.

- increased exposure of the area to fire, flood or other natural or environmental hazard.

The Proposal has been carefully designed in response to thorough and detailed flood and bushfire risk assessments and will not increase the risk of flood, or fire to the surrounding area ('Flood Impact Assessment', 'Bushfire Risk Assessment and Mitigation Plan').

A 'checklist' for an ideal location is provided in the Guideline, noting that a proposal does not need to satisfy every one of these criteria to be considered acceptable. This 'checklist' is a guide and not intended to be an exhaustive set of criteria. However, the Proposal has considered the seven criteria in selecting a suitable location for the Proposal as demonstrated below.

- *Ideally, a solar energy facility should be located:*

  on land with topographical conditions that avoids the need for unnecessary or excessive earthworks or changes to the natural landscape

As depicted on the Site Analysis Plans, the Site is virtually flat meaning that no excessive earthworks or changes to the natural topography are required to facilitate the Proposal.

*to avoid the loss of native vegetation and biodiversity and if losses cannot be avoided, they are minimised and can be offset*The Proposal has been designed to strategically avoid the loss of native vegetation and biodiversity at the Site (Biodiversity Assessment).

- *close to the electricity grid network, to minimise the need for additional infrastructure and associated impacts*

As identified, a 220kV transmission line that the Proposal will use to export electricity traverses the Site. As such, there will be no need for any additional offsite infrastructure to support the Proposal.

- a *sufficient distance from existing urban areas or designated urban growth areas*

As identified, the Site is located approximately 8 kilometres north-west of the nearest urban area which is the township of Camperdown.

- *where there can be adequate space between facilities within an area to avoid cumulative impacts of built form concentration*

There are no other existing or proposed solar energy facilities within the immediate area.

- *away from the floodplain of a major water course or wetland*

The Site is located within the Blind Creek catchment which is itself a tributary of the Mt Emu Creek catchment. The Site is not located within the floodplain of a major water course or wetland.

The Site is located approximately 1.1 kilometres west of Lake Bookaar which, as identified, is part of a chain of wetlands and lakes that form the Western District Lakes Ramsar Site.

The Flood Impact Assessment states in relation to this:

> *There is no hydrological connection between the Site and Lake Bookaar. Darlington Road runs along a ridge which is the catchment divide… The flood modelling presented later in this report shows that the combined flow from the north and the site into this low-lying land is not sufficient to overtop Darlington Road, and hence there is no connectivity between the Site and Lake Bookaar. The analysis has also shown that there would be insufficient runoff in the catchment draining to Lake Bookaar to lift the levels sufficiently in Lake Bookaar to overtop Darlington Road*

Similarly, the Biodiversity Assessment indicates that the Proposal will have no impact on this important wetland in terms of wildlife habitat.

- *where it has ready access to main roads*

The Proposal is serviced by the Darlington-Camperdown Road which is located approximately 700 metres to the east of the Site. The Darlington-Camperdown Road is the main road within the area and is classified as Road Zone, Category 1. A traffic impact assessment has indicated that the surrounding road network is suitable to support the type and volume of traffic generated by the Proposal with a few minor improvements as follows:

	▪ Upgrading of Meningoort Road (north) between Darlington-Camperdown Road and the western boundary of the Site as a typical 7.0 metre wide compacted gravel carriageway; ▪ Construction of a channelised left-turn lane from Darlington-Camperdown Road into Meningoort Road; and ▪ Sealing the first 30m section of Meningoort Road (north) to facilitate turning movements of heavy vehicles into and out of Meningoort Road (north).
Connecting to the electricity transmission network	*Network Connection* The Proposal has been designed to connect directly into the existing 220kV transmission line that traverses the Site via an onsite substation as is illustrated on the Site Plan. The Proposal's generator performance standards will be approved by AEMO, in accordance with the National Electricity Rules. *Managing cumulative effects in an area* There are no other existing solar energy facilities within the immediate or wider area and as such, the Proposal will not contribute to cumulative effects identified in the Guideline.
Protecting environmental values	*Crown Lands* As previously indicated, two Government Roads cross the Proposal Site. DELWP has previously provided permission to use these Government Roads. More detail is provided in Section 2.1 of this report. *Flora and Fauna* The avoidance of native flora and fauna was an integral part of the site selection process. As the Site description indicates, the Site has been largely cleared of native vegetation for the current land use of agricultural production. Two patches of native vegetation were recorded on the Site, a low-quality patch of Plains Sedgy Wetland was identified in the narrow 'east-west' drain that crosses the Site and a second patch of 'modified' Plains Grassy Woodland was identified along the western boundary of the Site (refer to the 'Biodiversity Assessment'). Both these patches of native vegetation have been strategically avoided by the Proposal. The Biodiversity Assessment prepared confirms that there are no records on the subject Site of species or ecological communities listed as threatened and/or protected under either the Environment Protection and Biodiversity Act 1999 (EPBC Act) or the *Flora and Fauna Guarantee Act 1988*.

Protecting cultural heritage	The avoidance of potential cultural heritage impacts was integral to the Site selection process for the Proposal. There are no known areas of Aboriginal Cultural Heritage Sensitivity within the Site and no native vegetation is proposed for removal. The Site boundary was refined to avoid an area of Archaeological Potential, which was identified through a field survey (see the 'Supplementary Cultural Heritage Assessment'). In addition, the Meningoort Homestead and associated areas classified under the planning overlay and the heritage registration have been avoided and are located well outside the Site boundary. There is no requirement for a Cultural Heritage Management Plan to be prepared under the Aboriginal Heritage Act 2006 for the Proposal. A Supplementary Cultural Heritage Report accompanies this application. The findings of this assessment are consistent with the findings for the Previous Application concluding that the Proposal has: *… adequately met the guidelines for assessing and considering heritage matters, as per the Solar Energy Facilities – Design and Development Guideline.*
Avoiding loss of high-value agricultural land	The findings of the Agricultural Land Report have previously been discussed in relation to the Purpose of the Farming Zone as have the previous findings of the Tribunal. The assessment contained within the Agricultural Land Report is relied upon with the conclusion from this assessment noted as: *In relation to avoiding the loss of high-value agricultural land as outlined in the Guideline, it is concluded that the Site is not considered to be strategically important agricultural land. All of the key areas that should be considered by a proponent when looking at a solar development according to the Guideline have been addressed, and it is concluded that the Site is suitable for use as a solar facility.*
Minimising impacts on landscape values	The Landscape and Visual Impact Statement demonstrates how the Proposal has been designed to minimise impacts on landscape values. The Landscape and Visual Impact Statement includes a photomontage of the Site and Proposal from the east along Darlington-Camperdown Road between the Site and Lake Bookaar. This viewpoint represents a view with the greatest level of visibility of the Proposal from the public realm, but nevertheless the visual impact is assessed as low, with the statement concluding that: *…the Proposal will sit low in the landscape and would not compete with key views, recognised landscapes or features of the area*. A further nine viewpoints are also outlined and considered within the Landscape and Visual Impact Statement and the assessment concludes that

	the visual impact from the Proposal from all these locations will be negligible to low at most. In conclusion the Landscape and Visual Impact Statement concludes that: *…as demonstrated by the preceding assessment, there appears to be no reason with regards to the design of the new Proposal for the findings to alter from those arrived at by the Tribunal for the Previous Application.* Note, the relevance of the 'Previous Application' with respect to the assessment of the potential landscape and visual impacts of the new Proposal is that the technology, footprint and scale of the new Proposal are the same as the Previous Application, with a few minor changes regarding the arrangement of the supporting infrastructure (see the 'Landscape and Visual Impact Statement'). In relation to the Tribunal's findings for the Previous Application with respect to Potential Landscape and Visual Impacts, the Tribunal stated: *5 …The expert assessment of landscape, views and vistas leads to a finding that the proposed solar energy facility would not have an unacceptable presence in the landscape, nor detrimentally impact on vistas, visual corridors or sightlines from the public realm - including from Mt Leura and the Lake Gnotuk and Bullen Merri lookout points, or along Darlington Road.* With regard to potential visual impacts to residential amenity the Tribunal, with the benefit of a Site visit to neighbouring dwellings, noted that: *186 …We do not downplay the concerns being raised but it is clear that the dwellings on small lots have mostly contained and protected themselves. In addition, the subject land is set back sufficient distances from these small residential lots, and other farmhouses, and will be buffered by a landscaped edge.* And that: 187 *…The impacts on residential amenity and outlook do not warrant refusal of a permit. We accept Mr Burge's analysis that the proposed landscape plantings around the site boundary will mitigate views that could be gained from dwellings east and south of the subject land.*
Natural hazard management	There are two aspects requiring consideration from a natural hazard management perspective being bushfire management and flood management.

Bushfire

A comprehensive Bushfire Risk Assessment & Mitigation Plan has been prepared which not only summarises identified risks and makes appropriate mitigation recommendations but also considers relevant policy and the previous decision of the Tribunal. This latter point is of particular importance given bushfire risk formed one of the principal reasons for the Tribunal refusing the earlier application stating that:

> 11 *… bushfire management issues need to be resolved as part of the planning approval, rather than being left to permit conditions. Resolution of these issues may impact on the design, layout and operation of the facility.*

In the Previous Application bushfire risk was proposed to be managed by the inclusion of appropriate planning permit conditions.

This new Proposal no longer adopts this approach and instead demonstrates an integrated approach to the development combining detailed consideration of bushfire risk in the final design of the Proposal.

Consultation with the CFA and its *Guidelines for Renewable Energy Installations* has resulted in the inclusion of features such as:

- A perimeter Asset Protection Zone of 10 meters around the entire Site;
- Perimeter and internal tracks to be of all-weather construction and minimum 4m wide to support firefighting vehicles;
- At least 6 m between rows of solar panels; and
- Eight dedicated firefighting water supply tanks, each with 100,000 litres of water.

Ongoing mitigation activities, including the provision of a Bushfire Mitigation Operational Schedule and a Preliminary Fire Response Plan, will ensure an approach to Bushfire Risk that prioritises the protection of human life at all times.

Importantly, the Bushfire Risk Assessment & Mitigation Plan concludes that:

… there is no increase in bushfire risk to the surrounding area associated with the development of the Proposal.

	On the above basis and for the reasons set out within the Bushfire Risk Assessment & Mitigation Plan, it is concluded that the potential hazards associated with bushfires have been appropriately considered and addressed. Flooding The subject site is not affected by any flood overlays under the Corangamite Planning Scheme. Nevertheless, flooding remains a relevant consideration and the Tribunal raised concerns with respect to the Previous Application and the impact of potential flooding. While the Tribunal did not raise a specific concern with respect to flood impacts per se, but rather that it did not have sufficient information to determine whether any flooding impacts were acceptable. The comprehensive Flood Impact Assessment addresses these concerns and includes detailed flood modelling which has been used to inform the design of the Proposal. The assessment provides a detailed response to the Tribunal's findings and confirms, as designed, the development and use of the Site for a solar energy facility will not increase existing flood conditions. The assessment concludes that: *Existing and developed conditions (with Solar Farm) were assessed using the 20% AEP and 1% AEP design flood events. The developed case model incorporated all features of the Solar Farm that could potentially alter the hydrological and hydraulic processes, including a process to represent the solar panels intercepting rainfall and concentrating the runoff into the 8.75 or 9 m gap between panels. The assessment found that there was no increase in flood levels or velocities on neighbouring land and that there would be no increase in the flow rate onto adjoining land.* Accordingly, it is considered flooding related issues have been properly assessed and that there are no flooding related issues associated with the Proposal.

Table 3: Assessment against 'Identifying suitable locations' within the Guideline

The subsequent section of the Guideline is entitled Best practice for proponents and includes four components addressed within Table 4 as follows:

Engaging the community/	Extensive consultation was undertaken as part of the previous application and issues brought up in this previous consultation have been included in this new application such as amending the location of the site entrance in response to concerns raised regarding vehicular safety.

	Further consultation in the preparation of this application also occurred including:
	• Consultation with Corangamite Shire and Department of Transport (DoT) to confirm local traffic and road conditions, and to seek advice on local and regional traffic matters relevant to the Proposal.
	• Consultation with the CFA on the design of the Proposal, including:
	  ○ CFA requirements and responding to CFA comments on design;
	  ○ Receiving and responding to CFA comments on the draft 'Bushfire Risk Assessment and Mitigation Plan');
	• Consultation with Corangamite Shire Council on the bushfire risk assessment process, including:
	  ○ Discussing the design of the Proposal in particular features to reduce bushfire risk;
	• Discussion with Powercor to enquire about the future relocation of the onsite 11kV line
	• Provision of the draft 'Flood Assessment' to the Glenelg Hopkins Catchment Management Authority.
	Formal consultation on this application has also occurred and the views of relevant stakeholders and the findings of the Tribunal decision have been incorporated into the design of the Proposal where relevant and appropriate.

Design Stage	*Siting facility components* (see 'Site Plan') ▪ The Proposal provides at least a 42 metre setback distance from any solar infrastructure to any neighbouring boundary. ▪ Bushfire risk setbacks have been incorporated into the design of the solar farm (see the 'Bushfire Risk Assessment & Mitigation Plan'). ▪ Row spacing exceeds 6 metres and therefore provides for emergency access and access for management purposes. ▪ All inverters are located along an access road that runs through the middle of the Proposal away from Site boundaries. ▪ The substation, the battery storage area and the operations buildings are grouped together around the 220kV line that will be used to export

electricity from the Proposal. This infrastructure is situated away from neighbouring boundaries ('Site Plan').

- Screening has been designed in line with recommendations from the Tribunal, in consultation with a landscape architect, a fire risk consultant, and a local tree planting group. The final design of the screen considers potential views from the private and public realm (see the 'Site Plan', 'Landscape and Visual Impact Statement', and the 'Landscape Plan').

Landscape Screening

- Landscape screens have been designed around much of the perimeter of the Site to reduce potential views of the Proposal from both the public and private realm (see the 'Site Plan' and the 'Landscape and Visual Impact Statement').

- A local tree planting company who has extensive experience in the area has been engaged to provide species recommendations along with planting and management protocols to ensure that the landscape screens will mature quickly, and will be of sufficient height and density to provide satisfactory screening (see the 'Landscape Plan').

- The landscape screen will be planted as soon as possible after construction has commenced. Noting, that there are times in the year when planting should be avoided (e.g. midsummer).

- Bushfire management protocols will be included in the management of the vegetation screens (see the 'Bushfire Risk Assessment and Mitigation Plan'). Protocols include:

  - The selection of trees with limited bark hazard;

  - Removal of dead branches; and

  - Maintenance of grass within the vegetation screens to 100mm or less during the Fire Danger Period.

Glint and Glare

The proposed layout was assessed for potential Glint and Glare impacts during the design stage, using best practice methodology as identified in the Guideline. The 'Solar Photovoltaic Glint and Glare Study' (see the 'Amenity Report') concluded that:

- There are no unacceptable Glint or Glare impacts at identified sensitive receivers as a result of the Proposal.

Although no mitigation measures were recommended as a result of the assessment, the solar panels procured for the Proposal would have anti reflective coating and non-reflective frames. Furthermore, buildings and infrastructure would use non-reflective materials.

Designing Security Measures

Security measures have been designed to minimise visual impacts and impacts to native flora and fauna:

- On-demand lighting only. All lighting will be limited to 4.0 metres in height and therefore at or around the maximum height of the proposed solar panels. All lighting will be downward facing. Sensor triggered security cameras (incorporating CCTV cameras) will be located around the perimeter of the Site);
- Vegetation screens have been designed to be located between the proposed security fencing and the Site's boundary to screen views of the Proposal from outside the Site.
- There are a total of eight access points through the security fencing (see Site Plan). Four main access points from Meningoort Road (north) and a further four dedicated emergency access points along the western boundary of the Site. The location and number of access points have been designed to ensure that all areas of the Proposal can be accessed from a number of locations. The location of the access points have been identified through the Bushfire Risk Assessment and Mitigation Plan.
- The security fencing will not replace current property boundary fencing.
- The development of the Site, including its security fencing arrangements, is not considered to '*impede movement of any fauna*', principally due to a lack of identified fauna or significant habitat corridors within the study area (the 'Biodiversity Assessment').

Traffic impacts

A Traffic Impact Assessment (TIA) that covers the topics outlined in the Guideline has been prepared for the Proposal as part of this permit application (see the 'Traffic Impact Assessment'). It concludes that:

- To facilitate safe access to the Site particularly during the construction and decommissioning stages, improvements to Meningoort Road (north)

and to the intersection of Meningoort Road (north) and Darlington Camperdown Road are recommended (see Section 3.3); and

- The provision of a Traffic Management Plan should be included as a permit condition.

Noise

The 'Amenity Report' that accompanies this application finds that noise as a consequence of the Proposal will be well below levels outlined in the EPA Victoria's *Noise from Industry in Regional Victoria* guideline.

While noise impacts are assessed to be acceptable before mitigation, best practice noise attenuation measures to prevent potential impacts will be included in the EMP for each stage of development. Further details are provided in the 'Amenity Report'.

Earth works and dust management

Extensive earthworks will not be required to facilitate the construction of the Proposal. This is due to the flat nature of the Site. Earthworks will be generally limited to:

- The construction of the internal track network, including the installation of 3 culverts and 2 bridges over drains within the Site. Note, the internal track network will follow current ground contours and will be constructed at ground level and the design of the prefabricated bridges avoids the need for subsurface foundations;
- The construction of cable trenches to bury electricity cables and associated communication lines to connect onsite infrastructure (i.e. connecting the tracker infrastructure to the inverter stations, the inverter stations to the substation, and between the substation and the battery area). Where underground cables are proposed to cross onsite drains, a horizontal bore will be used to install the cables underground and to ensure that drain infrastructure is not disturbed;
- The construction of a cable trench to reroute an existing 11kV distribution line underground where it crosses the Site;
- Land will be graded to form a flat and stable surface under the Inverter Stations, Operations Buildings Area, Substation Area, Battery Area and the Temporary Construction Compound;

- An existing farm dam located adjacent to Meningoort Rd (north), will be filled to allow panel infrastructure to be constructed in this location; and
- Improvements to Meningoort Rd (north) and the intersection of Meningoort Road and the Darlington Camperdown Road.

All earthworks and infrastructure have been designed to ensure that overland flows are not significantly altered, and that offsite runoff will not increase as a consequence of the Proposal (see the 'Flood Assessment'). The Proposal design, which minimises earthworks, reduces the potential for erosion and dust emission at the Site. However, any earthworks have the potential to create dust, therefore measures to mitigate this would be included in stage specific EMPs and in accordance with EPA Victoria's *Environmental Guidelines for Major Construction Sites*:

- Implementation of a dust prevention strategy for construction activities. The strategy should aim to prevent dust generation rather than its treatment;
- Keep land clearance and excavation to a minimum;
- Revegetate and mulch progressively as each section of works is completed;
- Water areas other than haul roads, if they are a source of dust;
- Promptly water exposed areas when visible dust is observed; and
- Modify activities if dust is observed leaving the Site towards nearby sensitive receptors.

During the operational period, ensuring ground cover is maintained across the Site will be the first principle approach to preventing dust generation, as explained at **Appendix C**

Natural hazard risk management

Bushfire

The Proposal has been designed in response to a comprehensive bushfire risk assessment. The assessment demonstrates the Proposal would not increase the risk of bushfire in the local area and includes practical measures to mitigate bushfire risk throughout the lifetime of the Proposal, including:

- Maintaining groundcover at or below 100mm at all times during the bushfire season.

	▪ A 10 metre firebreak (APZ), to be maintained for the lifetime of the Proposal, is included around the perimeter of the Site and around supporting infrastructure. ▪ Eight (8) 100,000 litre water tanks dedicated to fire suppression are included in the design (located at each of the access points to the Proposal). ▪ Access to the Site in a fire emergency will be documented and managed through the Fire Response Plan (FRP) which will support the Emergency Management Plan. A preliminary draft of the FRP is provided in the 'Bushfire Risk Assessment and Mitigation Plan'. Flooding The Proposal has been designed to ensure that it does not increase flood risks on the Site or in adjacent landholdings within the catchment (see the detailed Flood Assessment). Specifically: ▪ The flat topography of the Site ensures that minimal grading is required to facilitate the construction of the Proposal. ▪ The Site is not located within an immediate floodplain, watercourse or river system. ▪ Structures are elevated where necessary to ensure that the Proposal does not impede or concentrate water flows across the Site (see the 'Site Plan').
Other Matters	Dangerous goods and building fire safety ▪ It is noted that the onsite battery will require written advice from relevant fire authority under regulations 54 and 55 of the *Dangerous Goods (Storage and Handling) regulations 2012*. ▪ Onsite buildings will be constructed to comply with the National Construction Code. There are no buildings as part of the Proposal over 500 square metres. As such, the buildings will not require dispensation form the relevant fire authority under the Code. Electromagnetic radiation and interference ▪ The Proposal has been designed to ensure all infrastructure is placed more than 40 m from any neighbouring boundary (the closest dwelling is approximately 450 m from the Proposal).

	▪ In particular, the substation is approximately 186 metres from the Site boundary and the new high power voltage lines that will connect the Proposal to the existing 220kV line onsite is approximately 186 metres from the Site boundary. ▪ Inverters and transformers will be selected to ensure that they meet performance standards that reduce radiation. Note, this infrastructure will be located well away from the Site boundary. The closest inverter is approximately 171 metres from an external boundary and the closest transformer is approximately 120 metres from the Site boundary. For further details see the 'Amenity report'. Heat Island Effect ▪ The Proposal has a minimum setback distance from any neighbouring boundary of at least 30 metres to ensure any potential for a heat island effect is avoided.
Construction and operation stage	Environmental Management Plan (EMP) ▪ A preliminary EMP has been included to support this application and has been prepared in light of the Guideline (see the 'PEMP'). ▪ It is understood that there will be a requirement for an EMP as a permit condition, which will need to be submitted to, and approved by, the responsible authority before any activity starts at the Site. Risk and emergency management planning ▪ An Emergency Management Plan (EMP) will be developed for each stage of the Proposal. A Fire Response Plan (FRP) will be incorporated into the EMP. ▪ A preliminary Fire Response Plan (preliminary FRP) has been developed for the Proposal in line with the Guideline, the CFA's Guideline *for Renewable Energy Installations,* and in response to identified bushfire risk in the area. Site Access and traffic management A Traffic Impact Assessment has been included as part of this planning application. The assessment addresses the issues raised in the Guideline and commits the Proposal to a Traffic Management Plan (TMP), which will be prepared and agreed with the relevant authorities prior to any works commencing on the Site.

	Construction noise and dust management The avoidance and mitigation of potential construction noise and dust impacts on sensitive receivers will be included in the EMP as indicated in the Preliminary EMP that accompanies this permit application. ▪ Noise mitigation will include measures to reduce the potential noise from vehicles servicing the Site, from fixed machinery and machinery involved in construction activities. For example, all vehicles and machinery used at the Site will be required to meet Australian standards and they will also be required to be well maintained and in good working order. Noisy activities will be limited to normal construction work hours. In addition, stakeholders will be provided with contact details to ensure potential impacts can be addressed if they arise. ▪ Dust suppression measures will be included in the EMP as detailed in the PEMP and the 'Amenity Report'. Measures to suppress the generation of dust will be implemented during the construction operation and decommissioning phases of the facility. Dust impacts will be minimised by ensuring that ground disturbance is limited, and that ground cover is maintained as far as possible during all phases of the Proposal. Where limited disturbance to groundcover occurs, areas will be reinstated and revegetated as soon as possible. All revegetation sites will be monitored, and any unsuccessful areas will be assessed and remedial action taken to avoid the potential for dust emissions or erosion.
Decommissioning	The Proponent will be responsible for decommissioning the facility. Six months prior to decommissioning the Proponent will advise the relevant authorities with a detailed Decommissioning Plan. This plan will include the processes, plans and procedures for removing all built form to a level of at least 0.5 metres below the surface and for restoring the land to its pre-developed state. Information on the recovery, reuse and recycling of materials is provided in the 'Amenity Report' supporting this Application. It is intended that decommissioning would take approximately 12 months.

Table 4: Assessment against 'Best practice for proponents' within the Guideline

The final section of the Guideline Applying for a planning permit includes the decision guidelines at Clause 53.13 and provides guidance on how each should be considered. The above assessment and accompanying reports are considered to demonstrate that when objectively assessed against these decision guidelines that the Proposal is appropriate.

4.4 Does the Proposal adequately address the matters raised by the Tribunal in relation to the earlier application?

As set out in this report, the Site and a very similar Proposal have previously been considered by the Tribunal. The Tribunal identified six key considerations as follows:

- Planning policy support for renewable energy facilities.
- The loss of productive agricultural land.
- Significant landscape values and/or visual impact.
- Hydrological issues such as drainage, runoff and flooding.
- Bushfire management.
- The adequacy of the information and plans in support of the application, including site layout plans.

In relation to the first three of these considerations the Tribunal concluded that they favoured the grant of a planning permit. This corresponds with the above assessment which has found that there is significant and clear planning policy support for renewable energy facilities, the temporary loss of agricultural land is acceptable, and that the Proposal will result in no significant landscape or visual impacts.

The Tribunal did, however, conclude that the second three of these considerations required further resolution for a planning permit to be granted. This new planning application is considered to have satisfactorily addressed these issues.

Of note, a comprehensive Flood Impact Assessment has been prepared, which includes detailed flood modelling based on industry best practice and relevant policy guidance. Because of this work there can no longer be any question mark over whether sufficient consideration has been given to flood impacts associated with the proposed use and development.

Similarly, a comprehensive Bushfire Risk Assessment & Mitigation Plan has been prepared which serves not only to undertake a detailed risk assessment of the Proposal from a bushfire risk perspective, but where (low) risks are identified, proposes comprehensive mitigation measures to reduce the bushfire risk to life and property.

As set out at Section 2 of this Bushfire Risk Assessment, the methodology in preparing the Bushfire Risk Assessment & Mitigation Plan was substantial, including a literature review, desktop assessment, field work and stakeholder consultation. The assessment concluded that the Proposal, as designed, would not increase bushfire risk at the Site or in the

surrounding area. Again, there can no longer be any question mark over whether sufficient consideration has been given to bushfire risk and mitigation associated with the Proposal.

As set out at Section 3 of this report, the design has undergone a rigorous evaluation process in order to ensure an appropriate design response is realised. The plans themselves, along with all consultant reports, have been further reviewed to ensure all aspects of the development are accurately captured and considered.

On the above basis, it is concluded that this new application has satisfactorily addressed these specific matters and the grant of a planning permit for this new application would not be inconsistent with the Tribunal's previous findings.

4.5 Does the proposal satisfactory address other relevant matters for consideration?

4.5.1 Native Vegetation

The majority of the Site is devoid of native vegetation owing to its long history of agricultural use. However, two patches of native vegetation were recorded at the Site. A low-quality patch of Plains Sedgy Wetland ('Biodiversity Report') was identified in the narrow 'east west' drain that crosses the Site, which contained one species of native sedge, the Common Spike-sedge *Eleochaeris acuta*. A second patch of 'modified' Plains Grassy Woodland was identified along the western boundary of the Site (refer to the 'Biodiversity Assessment'). The patch of modified Plains Grassy Woodland is characterised by a *Blackwood Acacia melanoxylon* recruitment cohort located amongst planted eucalyptus trees and an exotic understory. In addition to this, several corridors of vegetation planted as wind breaks also exist across the edges of the Site but as assessed do not represent native vegetation.

The Proposal has been designed to ensure that all native vegetation at the Site will be preserved and thus no native vegetation will be removed as a consequence of the construction, operation or decommissioning of the Proposal (see 'Biodiversity Assessment').

No planning permission is required under Clause 52.17 (Native Vegetation) and the ability of the Proposal to avoid any disturbance to native vegetation represents a positive aspect that favours the grant of a planning permit.

4.5.2 European Cultural Heritage

The Supplementary Cultural Heritage Report also considers non-Aboriginal heritage matters and notes that *the Proposal will not have any direct impacts on matters of Historical Heritage* and that *there are no requirements under the Heritage Act 2017, the Planning and Environment Act 1987 or the Environment Protection and Biodiversity Conservation Act 1999*.

With respect to Meningoort homestead, while it is of architectural, historical and scientific (horticultural) significance to the State, the findings of the previous Tribunal are relied upon in that:

> 202. *We do not accept submissions that the proposed development will negatively impact on the Heritage Overlay or SLO1 (Mt Meningoort). We are unable to agree that the proposed development will adversely affect the integrity of the heritage place and its setting. Just because the solar facility could be seen, to varying degrees from the heritage-listed land and place, this does not equate to an unacceptable adverse effect on the place.*

4.5.3 Economic Impacts

Ethos Urban has prepared an Economic Impact Assessment, which accompanies this application to identify both economic benefits and economic impacts arising from the Proposal.

Through this assessment it is identified that a capital investment of approximately $280 million is initially proposed in the development of the solar energy facility together with the creation of 150 Full Time Equivalent (FTE) jobs within the 12-month construction phase. Approximately 10 per cent of this total investment is expected to be retained within Corangamite Shire, while 105 of the FTE jobs are expected to be direct local labour.

There will also be indirect employment generated as a result of the Proposal, with up to a further 170 FTE jobs created over the construction period, including jobs in catering, accommodation, trade supplies, fuel supplies, transportation, food and drink service, and the like.

Post-construction, there are expected to be approximately 10 FTE jobs created, of which six FTE jobs are expected to be locally sourced. A further three FTE indirect jobs are also expected to be created.

The overall economic stimulus associated with the Proposal is estimated at approximately $29.5 million and will include the establishment of a Community Fund anticipated to involve annual payments of $20,000 to support local projects and programs.

5. Conclusion

The proposed use and development of the subject site for the purposes of a solar renewable energy facility is entirely appropriate.

- Relevant planning policy contained within the Municipal Planning Strategy and the Planning Policy framework strongly supports the Proposal as does broader Government policy.

- The Proposal is entirely consistent with the Purpose of the Farming Zone and will lead to an appropriate outcome.

- When appropriately considered against the Purpose and decision guidelines of Clause 53.13 (Renewable Energy Facility (other than Wind Energy Facility)) the Proposal demonstrates a very high level of compliance. This is particularly the case when the Proposal is considered against the *Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019)*.

- When considered against the Tribunal's decision in *Bookaar Renewables Pty Ltd v Corangamite SC* the Proposal addresses the concerns raised by the Tribunal with respect to this Previous Application. Most notably:

    - Detailed flood modelling has been undertaken as part of a comprehensive Flood Impact Assessment, and which concludes that the Proposal raises no flooding risks.

    - A comprehensive Bushfire Risk Assessment & Mitigation Plan has been prepared which adequately demonstrates that the Proposal is of only low bushfire risk which can be appropriately mitigated/ managed.

    - A full-suite of well-considered and fully developed development plans and accompanying reports has been prepared and is submitted with this application.

- There are no other relevant matters which materially affect the appropriateness of the proposed use and development and indeed there are several positive aspects including the avoidance of any native vegetation removal and deliverance of an economic stimulus to the region.

For the above reasons, it is therefore concluded that the Proposal is worthy of the grant of a town planning permit and that one should be granted by the Department of Environment, Land, Water and Planning on behalf of the Minister for Planning.

Glossop Town Planning

August 2021

Appendix A: Bookaar Renewables Pty Ltd v Corangamite SC [2019] VCAT 1244

VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL

PLANNING AND ENVIRONMENT DIVISION

PLANNING AND ENVIRONMENT LIST

VCAT REFERENCE NO. P2390/2018
PERMIT APPLICATION NO. PP2018/060

CATCHWORDS

Section 77 of the *Planning and Environment Act 1987*; Corangamite Planning Scheme; Renewable Energy Facility; Solar Farm; Farming Zone; Visual Impact; Landscape Significance; Agricultural Land; Productive Land; Bushfire Management; Flooding and Drainage; Net Community Benefit.

APPLICANT	Bookaar Renewables Pty Ltd
RESPONSIBLE AUTHORITY	Corangamite Shire Council
REFERRAL AUTHORITIES	Department of Environment, Land, Water and Planning; Country Fire Authority; VicRoads
RESPONDENTS	Ian William Urquhart; Andrew Duynhoven; Charles Raymond Howley; Andrew and Sophie Wilson; Gillian Ruth Howley; Egon Walter Marburg; Catherine Beth Marburg; Marie Thornton; Robert Towner; Rodney Johnson and others; Andrew Smith; Geoff Smith; Joan Elizabeth Mahony; Laurie Hickey; Wendy Dianne Ward; Fiona Dean
SUBJECT LAND	520 Meningoort Road, Lots 51 and 52 and Res 1 on LP4677 and adjacent parts of Meningoort Road, Bookaar
WHERE HELD	Warrnambool (Days 1 – 3), Bookaar and Camperdown (Day 4 site inspection) and Melbourne (Days 5 – 10)
BEFORE	Mark Dwyer, Deputy President Margaret Baird, Senior Member
HEARING TYPE	Hearing
DATES OF HEARING	17, 18, 19, 20, 24, 25, 26 & 27 June; and 1 & 2 July 2019
DATE OF ORDER	15 August 2019
CITATION	Bookaar Renewables Pty Ltd v Corangamite SC [2019] VCAT 1244

ORDER

Permit application amended

1 Pursuant to clause 64 of schedule 1 of the *Victorian Civil and Administrative Tribunal Act 1998*, the permit application is amended by:

- Substituting for the application plans the following set of six sheets of plans appended to correspondence from Best Hooper to the Victorian Civil and Administrative dated 14 May 2019:
  - Plan prepared by Eco Logical Australia dated 09/05/2019;
  - Appendix 1; Diagram 1 (undated);
  - Appendix 1: Diagram 2 prepared by Eco Logical Australia dated 06/05/2019;
  - Appendix 1: Diagram 3 prepared by Eco Logical Australia dated 09/05/2019;
  - Appendix 1: Diagram 4 prepared by Eco Logical Australia dated 06/05/2019; and
  - Appendix 1 - Diagram 5 (undated).
- Describing the subject land as:

  520 Meningoort Road, Lots 51 and 52 and Res 1 on LP4677 and adjacent parts of Meningoort Road, Bookaar (including the following lots – Lots 1, 2, 3, 4, 5, 6, 7, 8, 9 (part), 10 (part), 11 (part), 12 (part), 13 (part) on Title Plan 844741K, Lots 51 , 52 and Res 1 on LP4677 and Meningoort Road (part).

Decision

2 In proceeding P2390/2018, the decision of the responsible authority is affirmed.

3 In planning permit application PP2018/060 (as amended), no permit is issued.

Mark Dwyer
Deputy President

Margaret Baird
Senior Member

APPEARANCES

For applicant	Mr J Cicero, solicitor, Best Hooper. He called expert evidence from the following persons: • Mr J Glossop, town planner. • Dr M Jempson, civil engineer (hydrology). • Mr D Poole, agricultural consultant. • Mr H Burge, landscape architect & visual impact consultant. • Mr V Gnanakone, traffic engineer. • Mr L Kern, ecological and bushfire consultant. • Mr D Scrivener, environmental scientist (glint and glare). • Mr J Noronha, economist.
For responsible authority	Mr D Vorchheimer, solicitor, HWL Ebsworth. He called expert evidence from the following persons: • Mr R Milner, town planner. • Mr C Goss, author of photomontages
For referral authorities	Mr S Foster, Land Use Planning Program Leader, and Mr M Allen, State Infrastructure and Dangerous Goods Team Leader, Country Fire Authority. Mr G Brooks, Program Manager Planning Approvals Barwon South West Region, Department of Environment, Land, Water and Planning.
For respondents	Mr A Duynhoven in person. He called expert evidence (also on behalf of A Wilson and A Smith) from the following person: • Mr S Kenny, agricultural consultant. Mr R Johnson for Rodney Johnson and others. Mr A Wilson, Mrs S Wilson, Mr R Howley, Mrs G Howley, Ms M Thornton, Mr R Towner, Ms J Mahony, Ms B Marburg, Mr A Smith, Mr I Urquhart, Ms R Brain, Ms W Ward, Ms F Dean, Mr L Hickey and Mr G Smith all in person.

INFORMATION

Description of proposal	Use and develop the subject land for a renewable energy facility; a 200MW solar power installation. It would consist of up to 700,000 photovoltaic (PV) solar panels and infrastructure and works, such as drainage, inverters, a substation, an office, water tanks and parking area. The PV panels have a surface area of 2 metres x 1 metre with a height of 4 metres. Based on the applicant's modified position during the hearing, the panels would be mounted on a single axis tracking system. The panels rotate on a north-south axis following the sun from east to west on an arc with a maximum tilt of 60^0 below horizontal. A 30-year project life is intended. Some vegetation removal is proposed to construct two culverts. Boundary planting is proposed to supplement existing vegetation.
Nature of proceeding	Application under section 77 of the *Planning and Environment Act* 1987 to review a refusal to grant a permit.
Planning scheme	Corangamite Planning Scheme [**scheme**].
Zone and overlays	Farming Zone. The subject land is not within a Significant Landscape Overlay (SLO1) and Heritage Overlay (HO80) that affect parts of 'Meningoort'. The homestead is included on the Victorian Heritage Register (VHR Number HO300).
Permit requirements	Clause 35.07 to use and develop the land for a renewable energy facility. Clause 52.17 to remove native vegetation.
Key scheme policies and provisions	Clauses 11, 12, 13, 14, 15, 17, 19, 21, 35.07, 52.06, 52.17, 53.13, 65 and 71.
Subject land description	The subject land is part of 'Meningoort', north-west of Camperdown. The entire holding is some 2,024ha and used for agriculture (primarily cropping, beef and sheep production). The elongated-shaped site [**subject land**] for the proposed solar energy facility is 588ha. It comprises all or part of 16 land parcels and parts of Meningoort Road where licenses operate. A 220kV transmission line traverses the subject land. The subject land is east of the homestead that is on the lower south-east side of Mount Meningoort. Some 98ha of the subject land is leased by a local farmer for cropping.
Tribunal inspection	Accompanied by the parties on Day 4 of the hearing including inspecting the subject land, some nearby and surrounding properties, public roads, and longer range viewing points such as from Mt Leura and the Camperdown Botanic Gardens.
Tribunal cases referred to	*ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219. *Croke v Moira SC* [2019] VCAT 112.

REASONS[1]

OVERVIEW AND EXECUTIVE SUMMARY

1 Bookaar Renewables Pty Ltd proposes a large solar energy facility on part of the Meningoort property at Bookaar, near Camperdown. The facility would comprise up to 700,000 solar panels, with an installed generation capacity up to 200MW, on a site of 588ha. The electricity generated by the solar panels would connect to the existing 220-kV transmission line that traverses the land.

2 The Corangamite Shire Council refused the permit application on six grounds, and a number of local objectors have raised additional concerns about the proposal. The applicant has sought to review the Council refusal at VCAT.

3 In undertaking the review, the Tribunal must consider whether the proposal produces an acceptable planning outcome having regard to the relevant planning controls, policies, application requirements, and decision guidelines in the scheme. In doing so, as a matter of integrated decision-making, the Tribunal must endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations.

4 Amongst the many issues raised by the parties, the Tribunal has identified six issues that it considers to be determinative to the decision whether to grant a planning permit for the solar energy facility at Bookaar. These are:

- Planning policy support for renewable energy facilities.
- The loss of productive agricultural land.
- Significant landscape values and/or visual impact.
- Hydrological issues such as drainage, runoff and flooding.
- Bushfire management.
- The adequacy of the information and plans in support of the application, including site layout plans.

5 In relation to the first three of these issues, the Tribunal's *preliminary* assessment is that the balancing of conflicting objectives would be unlikely to lead to the refusal of a permit for the solar energy facility at Bookaar. In particular:

- At a State level, there is strong planning policy support for renewable energy facilities, in appropriate locations and subject to site suitability.

[1] The submissions and evidence of the parties, supporting exhibits given at the hearing and the statements of grounds filed have all been considered in the determination of the proceeding. In accordance with the Tribunal's practice, these reasons do not recite or refer to all of this material. We have had regard to all of the State and local policies that are relevant to our assessment but do not recite them all.

- A solar energy facility, by its nature, needs to be located on rural land proximate to the existing electricity network. Here, a 220kV transmission line, with spare connection capacity, traverses the land.
- Although the 588ha of land proposed for the solar energy facility is productive, its agricultural attributes and potential are not of such significance that it should be precluded from consideration for a renewable energy facility as a matter of principle. It is not irrigated land or very high quality agricultural land.
- The site proposed for the solar energy facility is situated in an area of the western volcanic plains of Victoria that has a number of unique landscape and geological features. However, the land is not within a Significant Landscape Overlay under the scheme.
- The expert assessment of landscape, views and vistas leads to a finding that the proposed solar energy facility would not have an unacceptable presence in the landscape, nor detrimentally impact on vistas, visual corridors or sightlines from the public realm - including from Mt Leura and the Lake Gnotuk and Bullen Merri lookout points, or along Darlington Road. This is particularly the case given the solar panels have a maximum height of 4 metres, and are capable of being adequately screened within the proposed landscape buffers.

6 In relation to the last three of the six identified determinative issues, the Tribunal considers that it does not have adequate information upon which to make formal findings. This means that the Tribunal is unable to complete its integrated assessment of the proposal as a whole, in order to determine whether the proposal overall produces an acceptable planning outcome based on principles of net community benefit and sustainable development.

7 The hydrological assessment of the proposal is inadequate. The applicant has done little more than undertake a high-level desktop drainage and flood risk assessment. There is no flood data or modelling for the site, although part of the land was historically a swamp known to be subject to occasional inundation. Although the applicant assumes flooding will occur on the land, it cannot say where this will occur, in what volumes, to what depth and at what flow rates. It cannot say what engineering or mitigating works may be required (e.g. a retarding basin) and where these would be located, or what the impact of any flooding may be on the operation of the facility itself. There are uncertainties about the nature of pooling or runoff from the 700,000 solar panels or the 20 - 30 km of internal access tracks, which may differ from existing runoff patterns. An indicative layout plan used in the assessment showed significant setbacks from drainage lines. That plan does not form part of the substituted plans before the Tribunal, and the setbacks from major drainage lines have been removed. The applicant and its expert witness were unable to give an explanation for this.

8 These deficiencies and uncertainties are not of recent origin. In response to the initial notice of the permit application by the Council:

- The Department of Environment, Land, Water and Planning identified a number of deficiencies associated with the application material upon which it recommended further information be sought, including drainage and wetland management, and a location-specific or catchment-scale hydrological study. The Department also sought clarification about surface water patterns to protect ecological values, given the site's proximity to the Lake Bookaar Ramsar wetlands.
- The Glenelg Hopkins Catchment Management Authority advised that it had no flooding information for the subject land, but noted that the site is part of an operating drainage network with some drains being designated waterways in the catchment. It identified matters for assessment within the approval process.
- The applicant noted in correspondence with the Council that one of the recurring issues highlighted by objectors was the potential effect the solar energy facility could have on drainage in and around the site.

9 The applicant maintains that the overall risk is low, and all of these matters can be addressed through permit conditions, and can be dealt with as a construction issue. The Tribunal disagrees. Having regard to the attributes of the land, and the size of the proposed facility, the Tribunal considers that the drainage, runoff and flooding issues are a threshold matter that needs to be resolved as part of the planning approval, rather than being left to permit conditions. Resolution of these issues may impact on the design, layout and operation of the facility.

10 The bushfire assessment is also inadequate. The applicant's expert evidence cites some factors relevant to mitigate bushfire risk, but does not comprise a substantive risk and hazard assessment. There is no draft fire or emergency plan. There is reference to general CFA guidelines that require, for example, a static water supply of not less than 45,000 litres capacity, but all parties (including the CFA and the applicant) concede that this would be inadequate for a large solar energy facility covering almost 6 km². There is no clear assessment of what other fire suppressants may be needed to deal with a fire affecting particular electrical installations. There is no clear assessment of the impact of fencing and limited access, or the 20 metre landscape buffer surrounding almost the entire site, or likely location of all-weather internal access roads. There is an acknowledgement that the site may contain peat soils, but the applicant is unable to indicate whether they add significantly to the risk. There is no assessment of the capacity of the local brigade to deal with bushfire in or around the proposed facility.

11 Although the CFA did not formally object to the grant of a permit, it participated actively at the hearing. Having regard to the attributes of the land, and the size of the proposed facility, the Tribunal considers that the bushfire management issues need to be resolved as part of the planning approval, rather than being left to permit conditions. Resolution of these issues may impact on the design, layout and operation of the facility. The Tribunal notes that, in bushfire affected areas, as a matter of State planning

policy, the protection of human life is a threshold issue that must be prioritised over all other policy considerations.

12 The Tribunal also has a number of concerns about the lack of a more detailed plan for the proposal within the substituted plans, or even an indicative layout plan together with information as to the circumstances where the layout could be varied from that plan.

13 The Tribunal acknowledges that a detailed plan is not required for all of the technical assessments, and that the applicant needs to maintain some flexibility in the final layout of the solar panel arrays to take account of emerging technology. However, the substituted plans (the first of which is extracted in the introduction to our decision) show little a more than an outline of the site.

14 An indicative layout plan (the Rina plan) was used by some of the experts in their assessments, although it does not form part of the substituted plans before the Tribunal. It showed a smaller number of solar panels overall, on a slightly larger site, and with setbacks of the solar arrays from drainage lines. It showed some internal access tracks. That information is largely omitted from the substituted plans before the Tribunal, and even that indicative layout plan is deficient in the way in which it shows or deals with hydrological issues and/or bushfire management.

15 The Tribunal considers that additional information is necessary to determine whether or not the proposal achieves an acceptable planning outcome. Ideally, an assessment of the attributes of the land (such as its potential for flooding, drainage or runoff) and an assessment of risks and impacts (such as bushfire risk) should inform the design and layout of the proposed solar energy facility rather than having those matters addressed as an afterthought or deferred to permit conditions.

16 Apart from the six identified determinative issues, there are many other relevant issues in the overall planning assessment. These matters are not considered to be determinative of the outcome. However, some of these issues are not fully resolved – e.g. proposed works on Blind Creek Road.

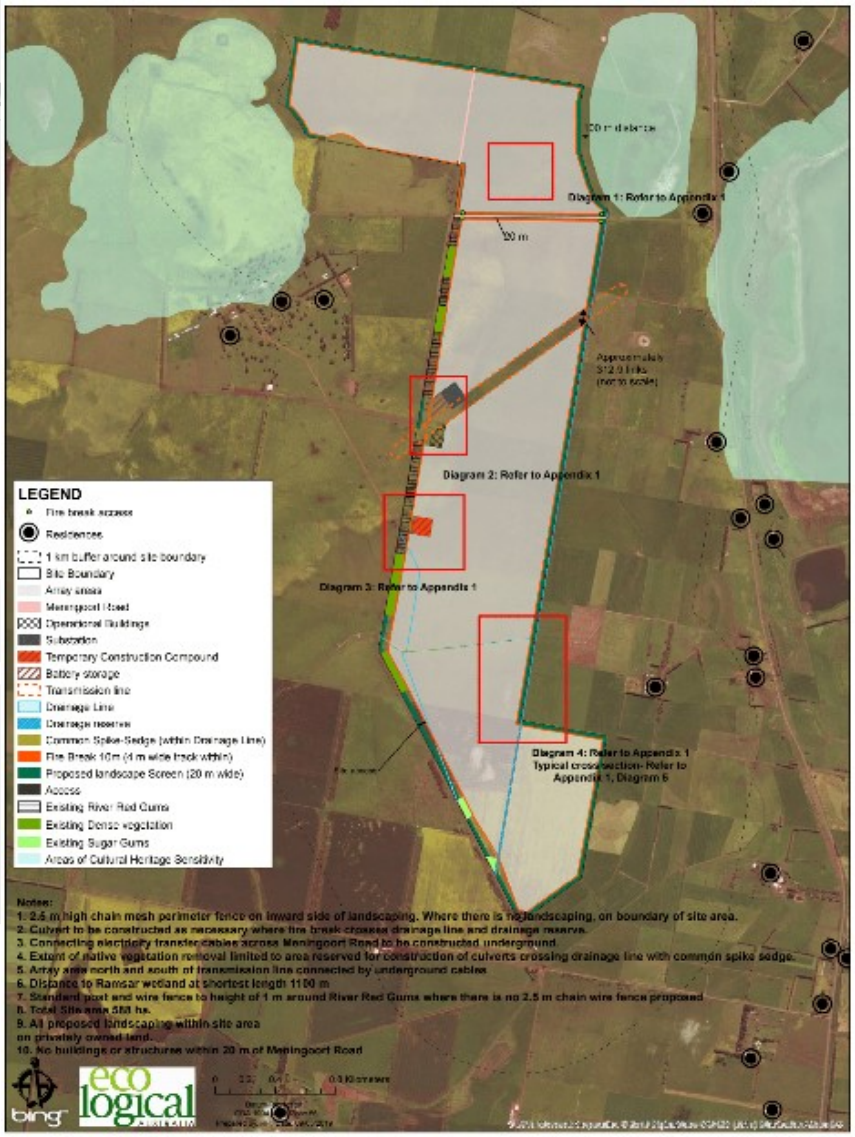
17 Given the nature of the proposal for a renewable energy facility, the Tribunal has considered whether it could provide an interim decision outlining its concerns, and then give the applicant the opportunity to address those concerns within the existing Tribunal process. Ultimately the Tribunal has formed the view that this would not be appropriate. Having regard to the issues to be resolved, the preparation of further plans and assessments, and the desirability of having them properly considered by the Council, Department, CFA and other parties, the process would be tantamount to a fresh application, and is better undertaken as such. Our decision may nonetheless assist in that process.

18 The Tribunal also notes that, since the hearing, the Department has released the *Solar Energy Facilities Design and Development Guidelines, July 2019*. The Guidelines have not yet been implemented and have not influenced our decision. They may nonetheless be relevant to any future application.

INTRODUCTION

Proposal

19 Bookaar Renewables Pty Ltd proposes a large solar energy facility on part of the Meningoort property at Bookaar. The plan below is part of a set of six sheets that we substituted for the application plans at the commencement of the hearing. It shows the 588ha solar energy facility[2] east/south-east of the Meningoort Homestead and surrounds and west of the Darlington Road. The facility would comprise up to 700,000 solar panels, with an installed generation capacity up to 200MW. Electricity generated by the solar panels would be converted through electrical infrastructure to be constructed on the land for connection into the broader electricity grid via the existing 220kV transmission line.



2 There are some discrepancies in the material presented in relation to the area of the proposal. The hearing proceeded on the basis of 588ha.

Decision under review

20 The Corangamite Shire Council [**Council**] received and assessed a permit application for this proposal. The Council resolved to refuse a planning permit on six grounds. The Council's assessing officer had recommended a permit issue subject to conditions. Bookaar Renewables Pty Ltd [**applicant**] asks the Tribunal to review this decision. Its case focuses on:

- Policy and strategic support for the proposal as well as the appropriateness and suitability of the site.
- Acceptable outcomes in terms of amenity, visual impact, ecology, fire risk, traffic, hydrological conditions and off-site impacts, subject to appropriate conditions.
- The proposal's substantial net community benefit.

21 The Council and parties[3] opposing the grant of a permit [**respondents**] express most concern about the scale and siting of the solar energy facility. While most recognise the benefits of, and support, the provision of renewable energy facilities, they say the proposal is too large on a site that is inappropriate because of the impacts that arise.

22 Plans we have substituted have not notably narrowed the disputed issues.

Key issues

23 Grounds relied upon by the parties, detailed submissions and the expert evidence presented at the hearing nominate a wide range of issues that we must address.

24 Key issues through the course of the hearing focus on:

- Whether there is sufficient information available to the Tribunal to make a proper and informed decision about the permit application.
- Whether the site is suitable for the proposed solar energy facility having regard to the land's productive agricultural use and capabilities.
- Whether the proposal's visual impact is acceptable in terms of the public and private realms. This includes specific views, vistas, the broader landscape, residential and farming properties within the vicinity of the subject land, as well as views painted by important landscape artist Eugene Von Gerard some 150 years ago.
- Whether the proposal is an acceptable response to the hydrological conditions of the land and adjoining land. This includes whether the construction process and facility infrastructure will alter those conditions in a way that can be appropriately managed to avoid unacceptable impacts on and beyond the subject site.
- Whether the facility creates an unacceptable fire hazard and risk.

[3] As well as persons who have lodged statements of grounds in this Tribunal proceeding, who are not parties. Their statements of grounds have been considered by the Tribunal.

Decision-making context

25 We must decide whether the proposal achieves an acceptable planning outcome having regard to the relevant provisions and policies in the Corangamite Planning Scheme ['**scheme**']. We have identified them in the Information section earlier. Reference in some submissions to clauses such as 43.01 (heritage), 54 (with respect to neighboiurhood character) and the Rural Conservation Zone and associated submissions are not relevant in so far as none of these clauses are triggered by this permit application.

26 Other documents addressed by the parties, and witnesses as relevant to their expertise, include:

- Great South Coast Regional Growth Plan (Victorian Government, May 2014) [**Regional Growth Plan**] is a reference document in clause 21.07.
- Draft *Solar Energy Facilities Design and Development Guidelines* Department of Environment, Land, Water and Planning, 2018 [**draft Solar Guidelines**].
- *South West Landscape Assessment Study* 2013 ['**SWLA**'], with its executive summary, study report and background report.

27 Clause 71.02-3 of the scheme requires the decision-maker to integrate the range of policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.

Solar Guidelines

28 We refer to the draft Solar Guidelines in our decision, but only to the extent necessary to respond to references to those draft guidelines by the parties in their respective submissions at the hearing. The draft Solar Guidelines carry very limited weight given their draft status, the fact they have been superseded, and because the siting and design criteria are not mandatory. The draft Solar Guidelines are not determinative to our decision.

29 More particularly, since the hearing, the Department of Environment, Land, Water and Planning has released what purports to be the final version of the *Solar Energy Facilities Design and Development Guidelines, July 2019*. [**Solar Guidelines**]. The document released by the Department clearly states that it is "*subject to implementation by future planning scheme amendment*" and contains a notation that it "*has no force or effect until this occurs*". Similar information appears on the Government website.

30 The Tribunal is not aware when the Solar Guidelines will be implemented (although it may be quite soon), nor whether the future planning scheme amendment will contain transitional provisions that apply or exempt the Solar Guidelines in relation to the current permit application for Bookaar. The parties have not had the opportunity to address the Solar Guidelines.

The Tribunal has not therefore given any weight to the Solar Guidelines in this decision.

ADEQUACY OF INFORMATION

Contentions

31 Throughout the hearing, several respondents challenge the adequacy of information in the permit application to enable them to understand the proposal and assess the impacts. Notable in this regard are submissions that there is inadequate information about the bushfire and hydrological impacts which are particular concerns for adjacent farmers and some other nearby property owners. [We address these and other criticisms in detail later].

32 The adequacy of, or lack of, information was not a ground in the Council's refusal. The Council officer formed the view that there was sufficient information to assess and make a recommendation to grant a permit with conditions. The Council pursues this concern, however, having regard to Mr Milner's evidence. His evidence refers to the proposal as notable for the "*uncertainty, imprecise or approximation of detail in its final features*".[4] When tested about this at the hearing, Mr Milner's list of defects are not, in his opinion, "*killer points*".

Comments from relevant agencies

33 In response to notice that was given by the responsible authority, the Department of Environment, Land, Water and Planning [**Department**] identified a number of deficiencies associated with the application material upon which it recommended Council seek further information. Drainage and wetland management, a location-specific or catchment scale hydrological study, and further information relating to native vegetation removal were among the topics cited in the letter. The correspondence said that if Council does proceed to determine the application without the information, the Department recommended specific conditions on any permit or Notice of Decision.

34 Mr Brooks' submission at the hearing, on behalf of the Department, explains that the Department sought clarification about native vegetation impacts, risks to the biodiversity of the Ramsar-listed Lake Bookaar, and an understanding of surface water patterns to protect ecological values.

35 In response to notice it was given by the responsible authority, the Glenelg Hopkins Catchment Management Authority [**CMA**] advised that it had no flooding information for the subject land. It stated the property is part of an operating drainage network with some drains being designated waterways in the catchment. It identified matters for assessment such as the consideration of off-site water flows and the potential for increased flow of water to drains outside the development area "*as an element of the approval process*". It suggested options for addressing the issues it raised including

[4] Statement of evidence by Mr R Milner, May 2019, at paragraph 111. A list companies the opinion being expressed.

implementing infrastructure designed to cope with the natural hydrology of the subject land or via an engineered solution to runoff management such as some form of detention system. It also referred to an option comprising a written management agreement with neighbours to ensure amicable arrangements are in place to deal with potential flow of water issues over the project life-cycle.

36 In its response to notice of the permit application, Wannon Water referred to an assessment of potential impacts regarding recycled water, flora and fauna, and operations. The agency supported the establishment of vegetation screening around the perimeter of the proposed development (including to reduce glare), supported any investigation of the impact of the proposed development on migratory birds to the wetlands in construction and operational phases (noting that because of the significance of the site, research may be required), and supported the receipt of information to understand how the development may impact on its operations at Bookaar. It further referred to risk mitigation and management, such as with respect to biosecurity as well as plant and animal pest management programs.

37 Through the submission at the hearing, the Country Fire Authority [**CFA**] indicates its expectation for a Fire Management Plan to be part of the Emergency Management Plan. Hazards, risks and controls need to be identified and implemented to ensure fire risk is managed as far as is reasonably practicable. Activities associated with fuel reduction and maintenance are captured in the organisation's Standard Operating Procedures, details of which have been documented in the CFA's original response to notice of the permit application and submissions at the hearing. The CFA makes a series of recommendations, such as with respect to siting, access, water supply, fuel and vegetation management, and emergency management planning. The CFA refers to the *Guidelines for Renewable Energy Installations*, CFA, February 2019.

Matters raised by the Tribunal

38 Arising from these and related submissions, evidence, and material referred to by the parties, at the hearing we questioned the applicant about the adequacy of the substituted plans, the relationship between the substituted plans and the earlier site plan, and the adequacy of information on several topics.

39 Our questions focussed on the design and information relating to the proposal in the substituted plans and evidence including:

- The absence of a more detailed plan of facility in the substituted plans. The original application to the Council included a site plan [**Rina plan**] with greater detail than the set of substituted plans.[5] The Rina

[5] We also note that it refers to 584,000 modules whereas the material relied on before the Tribunal refers to up to 700,000 solar arrays. Some material with the permit application referred to 700,000 or 800,000 panels. Some earlier material refers to 80 inverters for the lesser number of modules whereas the material relied in evidence refers to 60 inverters (eg. Mr Glossop's evidence at Appendix B). The substituted plans removed arrays from the north-east of the subject land. We note that the Rina plan states that it is indicative and may change in detailed design.

plan includes the location of banks of solar arrays and breaks in banks of arrays. The Rina plan is not part of the substituted set of plans.

- The site layout in the substituted set has been set out earlier in this decision and (among other differences from the Rina plan) shows arrays over most of the land, including over several drainage lines, without the larger breaks shown on the Rina plan.
- Multiple expert witnesses appearing for the applicant relied upon the Rina plan in undertaking their assessment and in forming their opinions, in addition to the substituted plans. This is notably in relation to the layout of the solar arrays given the substituted plans only show three sections of the proposal through Diagrams 1, 2 and 3. There are some inconsistencies between the substituted plans and the Rina plan.
- The appropriateness of deferring to, or relying upon, permit conditions to address matters of bushfire risk and hydrology, in particular, having regard to the site, its context and the substantial scale of the proposed solar energy facility. In this regard, we drew attention to comments from the Department and CMA when the permit application was being processed by the Council.

Applicant's response

40 The applicant has responded to these and related issues at the hearing. It submits the locations of solar panels within array areas shown in the Rina plan could be referred to by a permit condition. The applicant strongly submits that there is sufficient and robust expert evidence, that has been tested through the hearing, to support a permit with appropriately drafted conditions. The Tribunal does not need to know the location of each array.

41 In support of its submission, the applicant also emphasises the lack of express objection from relevant authorities.

42 However, the applicant also states that if the Tribunal is not satisfied with this approach then it could seek further information from the applicant and revised permit conditions, as occurred in *Croke*.[6]

Tribunal findings

43 We recognise that the precise location of all arrays and some operational details are not essential for some technical assessments, such as the impact of the development on the road network. We further acknowledge that that the applicant seeks a level of flexibility to take on-board the latest available technology. We also record the applicant's instructions to Mr Cicero through the hearing that the proposed panels would comprise a tracking system rather that either that system or a fixed panel system.[7] The applicant makes a number of other commitments through permit conditions, such as

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6 *Croke v Moira SC* [2019] VCAT 112, [64].

7 The application material, and multiple expert witness statements, are based on the solar panels being either fixed or tracking.

accepting permit conditions to not construct solar arrays over drainage lines.

44 Sufficiently detailed information is required in assessing matters under the scheme including in clauses 35.07 and 53.13. We have very carefully considered all of the submissions and material presented to us about the adequacy of information, the sources of information and evidence, and inconsistencies in some material. As we conclude later in these reasons, we do not accept the applicant's primary argument that there is sufficient and adequate material before the Tribunal to conclude the proposal is acceptable, as presented, subject to permit conditions. We accept that there is strategic support for a solar energy facility on the subject land and that some technical and operational matters can be addressed by permit conditions. However, additional information is necessary to enable us to determine whether or not the proposal achieves an acceptable outcome and net community benefit. This is with respect to environmental risks associated with hydrology/water management and bushfire. These are very important location-specific design and siting considerations in this case and, more broadly, are key policy objectives to be weighed with other relevant objectives.

45 We make three more points about the material and evidence before us:

- We do not accept submissions by several respondents that some experts called by the applicant are biased and/or have not fairly and independently assessed the proposal. The witnesses have presented their opinions within the scope of their instructions.
- Some expert evidence relies on information provided by the permit applicant. Examples are the number of staff and number of construction vehicles anticipated for this project. In addition, some of the material relied upon in expert evidence derives from other permit applications rather the data collected from completed projected or a project that is being built. An example is the figure of 10% of local investment being retained locally for a project of this size and nature.[8]
- Some expert evidence relies on information provided by local farmers, who may be parties in the proceeding. An example is Mr Milner's reference to local farming conditions.[9]

46 We have taken these matters into account in assessing the opinions given in evidence and the merits of the proposal.

RENEWABLE ENERGY

Policy position with respect to renewable energy

47 The applicant's opening and closing submissions address the National Electricity Market, Government climate change commitments and

[8] Statement of evidence by Mr J Noronha, May 2019, section 3.9 at page 11.
[9] Statement of evidence by Mr R Milner, May 2019, at pages 41-42.

associated initiatives, as well as the Victorian energy network.[10] We do not recite these submissions because the general proposition about the need for renewable energy facilities is substantially agreed in this proceeding.

48 Importantly for this proceeding is that the scheme aims to facilitate the establishment and expansion of renewable energy facilities, including solar energy facilities, in appropriate locations. This point is agreed by multiple expert witnesses, including Mr Glossop and Mr Milner.

49 The provision of solar energy facilities is part of how Government's commitment to renewable energy targets can be achieved. This is evident in:

- Clause 19.01-1 which seeks to facilitate local energy generation to help diversify the local economy and improve sustainability outcomes.
- Clause 19.01-2S Provision of renewable energy, which seeks to promote and facilitate renewable energy facilities in appropriate locations, develop infrastructure to meet community energy demands, and ensure appropriate siting and design considerations are met.
- The purpose of clause 53.13 which is to "*facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area*".
- The draft Solar Guidelines that include references to renewable energy targets, *Victoria's Renewable Energy Action Plan* in terms of investment in energy storage and new technologies and *Victoria's Regional Statement* with respect to job opportunities expected to emerge with new energy industries.[11]

50 The Regional Growth Plan refers to developments in (among several) renewable energy generation as offering opportunities to diversify the economy, particularly in rural areas.[12] It identifies the 500kV transmission line as a key asset. The transmission line on the subject land connects to this asset. Policies for alternative energy production include supporting the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to the regional community. These themes are reflected in the Regional Growth Map, which identifies a primary growth corridor that includes Camperdown.

51 Some parties suggest that the information in the Regional Growth Plan is outdated, such as with respect to transmission line capacity. That is not verified but the themes around the importance of renewable energy (and other industries such as agriculture and tourism) are important. They are part of local policy in the scheme.

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10 Paragraphs 36 -39 in the written opening submission on behalf of the permit applicant and paragraphs 40 - 59 in the written closing submission on behalf of the permit applicant.

11 *Draft Solar Energy Facilities Design and Development Guidelines*, Department of Environment, Land, Water and Planning, 2018, at page 7. State policy documents are relevant under sections 60(1A)(j) and 84(1) of the *Planning and Environment Act 1987*.

12 Great South Coast Regional Growth Plan, 2014, at page 22. This is consistent with State policy at clause 17.01-1S to support rural economies to grow and diversify.

52 It is relevant that clause 21.01-2 identifies a key planning issue as:

> Maximising the potential benefits of energy production while managing the impacts on amenity, roads and environment.

53 Clause 21.05 includes policy to support the establishment and expansion of renewable energy industries. A strategy is to facilitate the establishment and expansion of renewable energy facilities.[13]

54 The Tribunal's decisions in *Croke*[14] and the Panel Report for the Greater Shepparton Solar Energy Planning Permit Applications[15] [**Shepparton Panel report**] give weight to the benefits of the projects being considered in those permit applications to their potential to contribute to the achievement of Government's renewable energy targets.

55 One submission in this proceeding contends the climate situation is not dire. The submission contends that there is no need to reduce emissions and there are other energy supplies if required such as natural gas. Another submission refers to the global warming effects of reduced agricultural production.

56 We understand that people have different opinions about climate change and what influences climate change. However, we are bound to apply and give effect to the outcomes stated by the scheme, not challenge or undermine the directions of State policy that clearly seek to advance renewable energy and respond to climate change.[16] This is similarly the case notwithstanding we note broader concerns identified in submissions about the disposal of the solar panels, with toxicity and pollution potential; potential financial costs to the community, such as through government subsidies; and emissions generated in the manufacture of solar facility components.

Projected output of the proposed solar energy facility and system capacity

57 Several parties challenge the claimed output of the project, particularly given that the format of the solar panels is not resolved. Ms Dean submits the different systems (mounted on a single axis tracking system or fixed frames) produce different outcomes. This submission was made prior to the applicant's statement at the hearing that the tracking system would be used. Mrs Howley also questions the claimed energy generation.

58 The application relies on the potential for the proposed solar energy facility to generate up to 420GWh of renewable energy per year, for a life span of 30 years. This equates to enough clean energy to power the equivalent of 80,000 average Victorian households each year for the life of the project.

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13 Clause 21.05 Objective 4 and Strategy 4.1.

14 *Croke v Moira SC* [2019] VCAT 112, [45].

15 *Panel Report for the Greater Shepparton Solar Energy Planning Permit Applications 2017-162, 2017-274, 2017-301 and 2017-344*, section 2 including section 2.5(iii).

16 Clause 19.01-1S seeks to support transition to a low-carbon economy with renewable energy and greenhouse emission reductions including geothermal, clean coal processing and carbon capture and storage.

That estimate has not changed with the instruction that the arrays would take the form of a tracking system. Even if the output is less than the figures cited, we agree with the applicant that this proposal has the potential to make a meaningful contribution to the grid, as Mr Milner also has acknowledged in his evidence presented on behalf of the Council.

59 We also accept that proximity to the existing electricity network and spare connection capacity available at the anticipated connection point are highly important considerations for solar energy facilities.

60 There are also submissions before us questioning the capacity of the transmission lines and wider network to accommodate the electricity that would be generated by the proposal and many locations that could satisfy the criterion of proximity to the transition line.

61 The applicant responds to these submissions stating the Australian Energy Market Operator [**AEMO**] has confirmed that capacity exists for this project to proceed. This submission contrasts with those of respondents' that contend the AEMO has forecast the need to upgrade capacity to cope with the current committed increased renewable projects.[17]

62 Mr Cicero submits there are limited opportunities to connect new renewable energy generation to the existing transmission network due to:

- The overall scarcity of transmission lines with existing capacity in suitable locations for renewable energy;
- The limited number of sites adjacent to transmission lines; and
- The increasing number of renewable generators creating capacity issues in the existing infrastructure.

63 In addition, the applicant highlights transmission losses occur as electricity moves through the network and this is a factor to be taken into account. Mr Cicero submits that the subject land is a rare opportunity to connect directly into the National Electricity Grid at a location where there is capacity to do so without requiring the need to upgrade or develop new connecting lines. He submits this ensures that the electricity generated reaches key hubs such as Geelong and Melbourne without suffering inefficient transmission losses.

64 We accept the applicant's submissions that the proposal will contribute to the achievement of Government's renewable energy targets and that network opportunities are not unlimited. We understand that the figures provided by the applicant about output, carbon savings and system capacity are not ones that have been able to be tested, such as through cross-examination. We have taken this into account in weighing up relevant considerations but we have also been mindful that submissions questioning these matters are, too, without independent verification or evidence. Importantly, we must consider if the subject land is an "appropriate location" for the proposed facility and the nature and extent of its impacts. We refer to these matters next, in broad terms. We then consider the

[17] Mrs Howley's submission, at paragraph 34, page 10 of 128.

submissions, evidence and grounds relating to the design and siting of the proposed solar energy facility.

SITE SUITABILITY

Scheme provisions and policy

65 There are no prescribed site features for a solar energy facility in the scheme nor policies that guide the locational attributes for this type of renewable energy facility. The decision guidelines in clauses 35.07 apply to many uses and developments that may be proposed in the Farming Zone.

66 Clause 53.13 sets out application requirements and decision guidelines for a renewable energy facility. The decision guidelines (below) are more confined than the range of decision guidelines in clause 35.07-6:

- The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.
- The impact of the proposal on significant views, including visual corridors and sightlines.
- The impact of the proposal on the natural environment and natural systems.
- Whether the proposal will require traffic management measures.

67 The draft Solar Guidelines refer to strategic site considerations and 'ideal' sites with respect to landscape values and visual amenity impacts. Some parties submit the site does not meet all of the criteria. That may be true, but the permit application is not required to. This is not only because the draft Solar Guidelines carry limited weight given their draft status but also because there is not a need or mandatory requirement for every site to be determined to fit 'ideal' criteria.

68 There is no 'checklist' identifying all of the site features make a site appropriate for a solar energy facility. A site's strategic and specific circumstances must be assessed, with opportunities, constraints and impacts being identified. The scheme provisions and policies set out the matters we must consider. The types of considerations in the draft Solar Guidelines align with these.

Broader network planning and locational guidelines

69 More broadly, Mr Milner, and some parties, question the lack of clear guidelines as to where different types of renewable energy facilities should be located. That lack of a strategic review, Mr Milner says, means that there is not a strategic approach to where the facilities should be encouraged. It is not the situation, however, where Mr Milner states the Tribunal cannot or should make a decision in relation to the merits of this permit application.

70 We appreciate that there is not a National, State, regional or local policy that prescibes the location of solar energy facilities. The scheme broadly

refers to renewable energy facilities. The Regional Growth Plan highlights a key role for renewable energy with specific reference to wind energy. Solar energy facilities are not cited in the Planning Policy Framework or Regional Growth Plan. However, current local policy in the scheme and the Regional Growth Plan predate the emergence of large solar proposals in Victoria. Clause 19.01-2R addresses renewable energy for the Great South Coast with the stated strategy to plan for and sustainably manage the cumulative impacts of alternative energy development. Additional strategic planning may occur but it would not be appropriate to defer a decision in this proceeding awaiting such work. We have a framework for decision-making through the scheme. The other documents to which we have referred are relevant as indicated.[18]

71 The draft Solar Guidelines refer to an *Integrated System Plan* [**Plan**], which the AEMO released in July 2018. The Plan makes many recommendations based on complex technical assessments. It says it has "*identified a number of highly valued REZs across the NEM with good access to existing transmission capacity*".[19]

72 Five REZs are nominated in Victoria. The Plan states that the REZs are areas where clusters of large-scale renewable energy, including solar energy facilities, can be developed through coordinated investment in electricity transmission and generation. The Plan discusses about how to 'best develop' the REZs and recommends one in Victoria (the Moyne REZ) for large-scale generator connections in the short-term.[20] The Plan explains essential steps including engagement with traditional owners, residents, broader communities, and local governments prior to any large-scale development of a REZ.

73 Moyne (wind) is an "*immediately optimal*" REZ development area, supported by existing transmission capacity and system strength and capacity. It is short-term priority for wind farm generator connections.

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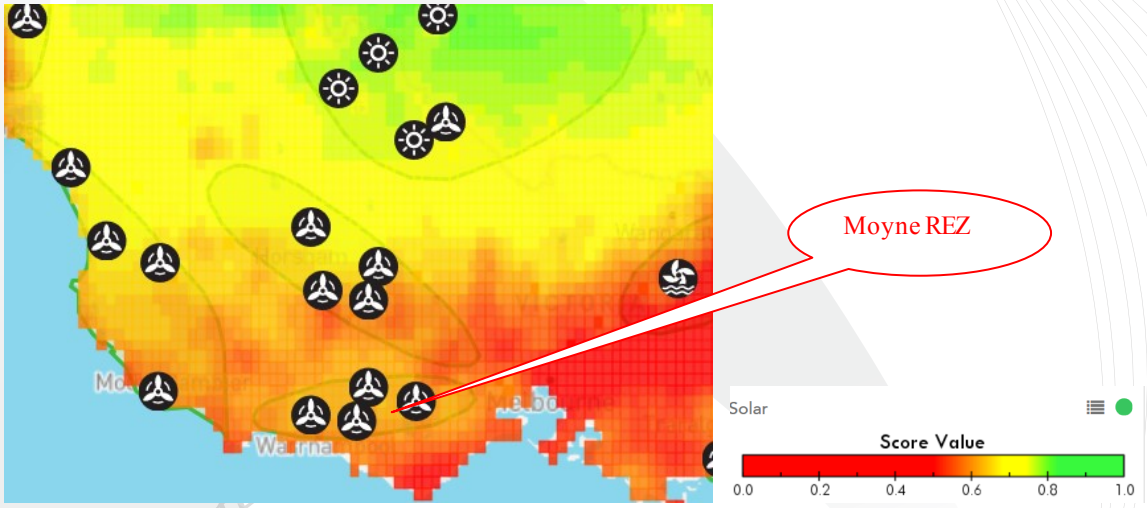
18 All parties have had the opportunity to address the scheme and additional documents, as relevant to their cases. A number of expert witnesses have addressed the additional documents, as relevant to their expertise, either in their statements of evidence and/or in presenting their evidence and being cross-examined at the hearing.

19 *Ibid*, Executive summary at page 6.

20 AMEO, 2018, *Integrated System Plan*, Extract from "Renewable Energy Zone Candidates" Figure 24, AEMO, at page 50. The Moyne REZ is no. 15.

74 The Moyne REZ has a solar quality rating of 'E'.[21] An extract of the plan showing the solar score value is below.[22]



75 Some argue that the Plan's lack of reference to solar farms in the region, and the low solar score or rating, are relevant to assessing the policy and strategic support given to a solar energy facility at Bookaar. Further, a number of parties question the suitability and logic of the subject land for a large solar energy facility as there is limited solar access. They contend the AEMO maps show the Moyne REZ as being better suited to wind generation. While making a similar point about available solar access, Mr Milner concedes that this is not determinative in this proceeding.

76 We find that none of these and related arguments or submissions are adverse to the permit application. Multiple wind farms are located in the region, as generally identified on the mapping. Information tendered by the Council identifies windfarms in the wider region that have been built, are being constructed, and are approved.

77 There is a focus on wind in the AEMO's material but this should not be assumed to be exhaustive nor exclusive. New opportunities for renewable energy will emerge as technolgy changes and land is investigated. Diversification of renewable energy facilities is encouraged by the scheme. It is reasonable to consider an opportunity for a solar energy facility in an appropriate location within the region, that could potentially contribute positively to the outcomes being pursued. This is subject to acceptable impacts and when balancing all relevant considerations.

78 Moreover, it cannot be assumed that because the subject land is located where there is less solar radiance than northern Victoria that a solar energy facility is unsuitable on the subject land. Any proponent will need to satisfy itself about the technical viability of its project. Submissions about the adequacy of solar access to support the proposed solar energy facility have not been accompanied by any information that would persuade us that the permit application is fundamentally flawed because of radiance limitations.

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21 *Ibid*, Table 7, at page 61.
22 From the indicative plan.

The question of locational flexibility and other sites

79 Compared with the subject land, in his evidence for the Council Mr Milner refers to more suitable sites as barren, rocky or sandy and incapable of being effectively made productive. It is said that there is a "*degree of portability about a solar energy facility*" in so far as the facility could be relocated along another part of the transmission network. The possibility of another configuration for the proposed solar energy facility is also canvassed in Mr Milner's evidence. Mr Milner says that the impact of the project could be reduced if the proposed facility is positioned perpendicular to Darlington Road with an east-west orientation.

80 None of these points are verified and none influence our decision. Even if there is another place where a large solar energy facility could be located along the transmission line[23], or another layout for the current proposal adopted, our task is to consider whether a planning permit should be granted for the permit application before us, not whether the location is ideal, not if there is another place for it and not if it could be laid out differently.[24]

Attributes of the subject land

81 Our reasons now focus on the strategic and specific considerations relating to the subject land, whether it is an appropriate candidate for the proposed use and development and whether, overall, the proposal achieves an acceptable outcome and net community benefit. Criticisms of the size of the proposal must be assessed in this context.

82 It is, however, favourable to the permit application in broad terms that:

- The location is assessed by the proponent to have suitable access to solar resources. The applicant submits the panels will work efficiently in cooler temperatures and excessive heat can reduce the performance of photovoltaic panels.[25]
- Contiguous land is available to accommodate a large solar energy facility that can make meaningful contribution to renewable energy targets and goals.
- A transmission line traverses the subject land providing proximity to power grid for connection and supporting the use of existing infrastructure. The applicant states there is capacity to do so without requiring the need to upgrade or develop new connecting lines.
- There are not significant stands of remnant native vegetation on the land.
- There are opportunities for landscaping to contribute to the shelter-belt/windbreak pattern evident in the landscape.

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23 We make no findings on this point.

24 *Knox City Council v Tulcany Pty Ltd* [2004] VSC 37.

25 Information in support of this submission was cited to in the closing submission. We note this information seems to relate to smaller scale facilities rather than a solar farm. The point is not challenged by other parties.

- The site for the solar energy facility is not located within land that is either within the Heritage Overlay that applies to Meningoort or the volcanic cone/s that are within a Significant Landscape Overlay.

AGRICULTURAL LAND

Policy and scheme provisions

83 The policies and provisions in the scheme relating to agriculture have been set out at length in written and oral submissions, and expert evidence. We do not recite all of this material.

84 An imperative expressed through the Planning Policy Framework is to protect productive agricultural land and manage competing demands for such land.[26] Clause 14.01 Agriculture has the objective to protect protect the State's agricultural base by preserving productive farmland. Strategies include:

- 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. Prevent inappropriately dispersed urban activities in rural areas. Protect strategically important agricultural and primary production land from incompatible uses.

85 Further, clause 14.01 requires that when considering a proposal to use, subdivide or develop agricultural land, the decision-maker must consider (among other things) 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.

86 The purpose of clause 35.07 includes to encourage the retention of productive agricultural land and to ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.

87 The decision guidelines in clause 35.07-6 set out relevant considerations with respect to these matters. They include:

[26] Clauses 14.01-1S and 21.04-1.

- 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 agricultural qualities of the land, such as soil quality access to water and access to rural infrastructure.

88 State policy, local policy and the purpose of the Farming Zone all emphasise the importance of agricultural land to the local and broader economy. For example, regional policy at clause 17.01-1R addresses "Diversified economy – Great South Coast" where strategies includes:

> Support agriculture as a primary source of economic prosperity and increase the region's contribution to the nation's food production.
>
> Support rural production and associated economic development opportunities including rural industry, rural sales, accommodation and tourism.

89 Local policy identifies agriculture as the Shire's largest and most important industry. It quantifies the contribution agriculture makes, as also highlighted by the Council, some respondents and expert witnesses. Local policy notes the advantage of fertile volcanic soils and reliable rainfall for local dairy farmers in the South and the flat plains in the north that provide ideal conditions for cropping and sheep farming.[27] There is a strong emphasis in the local policy on preserving agricultural land, maintaining the land agricultural production, and avoiding the fragmentation of productive agricultural land.[28] Local policy seeks to protect agricultural land from developments that would reduce the contribution that agriculture makes to the local economy.[29]

90 The Strategic Framework Plan[30] sets out key strategic directions for future land use planning and development. The purpose is, among other things, to identify locations where specific land use outcomes will be supported and promoted. The plan identifies the "*Premier Agricultural Region of Victoria*" to the south and south-west of Cobden east of Timboon and north of Simpson. This is consistent with the major strategic issues identified on the Strategic Land Use Framework Plan that include:

> The location of high quality agricultural land within the Timboon, Cobden and Simpson areas which is used for dairying, the need to protect this land from inappropriate development.

91 This does not mean there is no other valuable and productive agricultural land, as is well documented in the scheme. However, it is relevant that the subject land is not within the mapped area nor within the Timboon, Cobden

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27 Clause 21.04-1.
28 Clauses 21.01 and 21.04.
29 Clause 21.01.
30 Clause 21.01.

and Simpson areas that is identified is of particular strategic significance by the scheme.

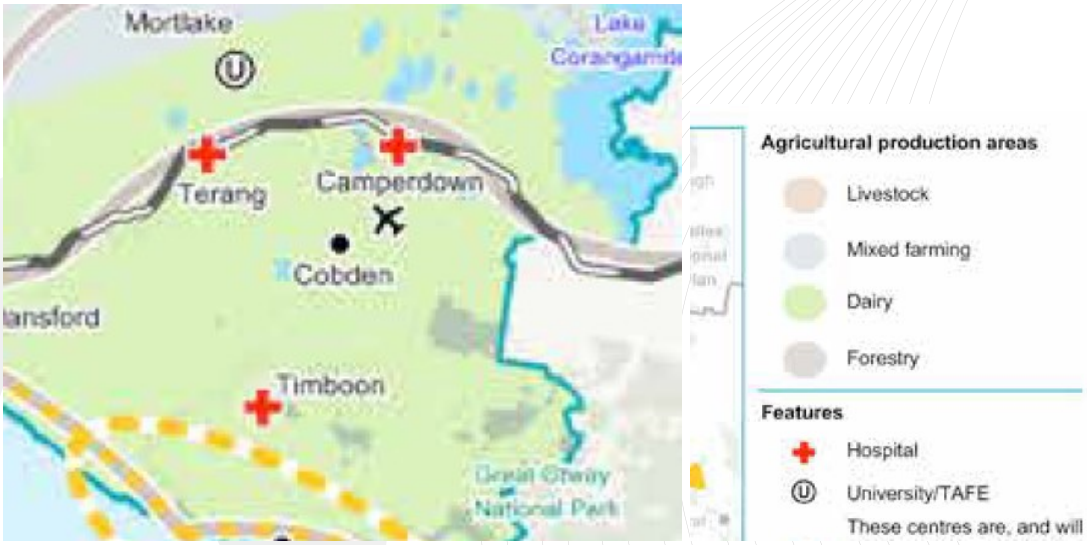
92 One respondent questions the location of the subject land in a Farming Zone and says that land that is in a Renewable Energy Zone or Special Use Zone would be more suitable, the latter applying to major gas extraction facilities. The Victoria Planning Provisions [**VPP**] do not currently contain a Renewable Energy Zone. The term REZ is used in the context explained earlier. A permit application can be made for a large renewable energy facility in the Farming Zone and must be assessed on its merits.

Other documents

Regional Growth Plan

93 The Regional Growth Plan reiterates the importance of agriculture in the economy of the Great South Coast and to sustainably manage areas of high quality agricultural land to support growth in food production. It emphasises the region's position to develop a more diversified agricultural economy, with value-adding industries, and to play a more significant role in the nation's food production. A policy strategy or action is to identify strategically important agricultural land that requires planning protection from encroachment from urban expansion, rural residential and other potentially incompatible uses.

94 Map 3: Strategic assets acknowledges and reinforces the role of land north of Camperdown as a dairy production area:



Draft Solar Guidelines

95 The draft Solar Guidelines reiterate State policy with respect to agriculture and recite the following documents with respect to regional development and agriculture - *Victoria's Regional Statement 2015*, *Agriculture Victoria Strategy 2017* and regional growth plans.

96 The document refers to productive farmland that is of strategic significance representing the most productive farming land in the State. It describes this

productivity as arising from a combination of land attributes and economic factors, and adds that "*Most rural land is not considered to be strategically significant agricultural land*".[31]

97 As we have indicated, the draft Solar Guidelines are of limited utility to our decision. However, in relation to the significance of agricultural land, they do no more than state what might be expected in the assessment of a proposal's impact on productive agricultural land and agriculture in a local or regional context. This includes for example an assessment of:

- the agricultural quality of the proposed site;
- the amount of strategically significant agricultural land in the Shire and region;
- the potential impact of removing land from agricultural production.

Strategic significance of the subject land

98 The significance and qualities of the subject land for agricultural production is a key point in dispute in this proceeding. Determining and understanding these matters are essential in assessing the impact of the proposal on productive agricultural land.

Overview of parties' positions

99 The Council submits that although the subject land does not wholly comprise prime agricultural land, it receives ample rainfall and has been used continuously for productive farming purposes. Relying on Mr Milner's evidence, and consistent with Mr Kenny's evidence, the Council says the capacity of the land could be improved and, as such, has the potential to contribute to agricultural production in the area and the broader role and potential of land to build, diversify and grow farm enterprises. However, Mr Milner states that the "*Site is not farmland of strategic significance and it is not reliant on irrigation infrastructure, which might have been threshold issues on the choice, selection and suitability of the Site*".[32] This contrasts with Mr Kenny's opinion to which we refer below.

100 Mr John Galliene, an experienced agricultural consultant, was retained by the Council to provide an expert witness statement in this proceeding in relation to agricultural matters. The Council tendered a copy of his draft statement of evidence. Mr Galliene did not prepare a statement for the hearing and was not called on behalf of the Council. Mr Galliene's report describes farm production, soil type and pastures, temperature, rainfall, frosts, sunlight hours and summarises the climatic conditions. It refers to the soil type covering the proposed solar farm site as of lower quality due to its inherent physical characteristics and less productive soils on other areas of the property, and the Camperdown area.

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31 *Draft Solar Energy Facilities Design and Development Guidelines*, Department of Environment, Land, Water and Planning, 2018, at page 11.

32 Statement of Evidence, paragraph 133 on page 41.

101 Respondents refer to the significance of the subject land for primary production. This includes the use of Meningoort for dairying and Bookaar's long history of dairy production. The reliable rainfall (including when compared with land further to the north), good moisture holding capacity, and lease opportunities the subject land provides, are among the relevant factors in their submissions. They strongly challenge reference to the subject land as of 'poor' quality. A number criticise the material before the Tribunal for failing to properly classify the capability of the subject land using reports prepared by Agriculture Victoria.

102 Mr Duynhoven called expert evidence (also on behalf of Mr Wilson and Mr A Smith) from Mr Kenny to address the productive capacity of the subject land and, as Mr Kenny defined it, whether the site can be understood as strategic productive agricultural land. They, and other respondent parties, rely on the evidence in support of their submissions that agriculture is prioritised over every other industry with respect to economic development strategies for the region. Further, based on Mr Kenny's assessment, and when considering the criteria in the Draft Solar Guidelines, the potential productivity of the Bookaar region and subject land can be classified as 'strategic'. They refer to the subject land as being of high value, productive, not in an irrigation district, with high rainfall and offering variety and niche market potential.

103 The applicant emphasises that the scheme does not recognise the subject land as being strategic agricultural land or land of high quality. The subject site is not within the location identified by the scheme, which we have recited above. The applicant relies on Mr Poole's evidence in submitting that, in its present condition, the subject land is not of high agricultural value. The evidence is also that there is some benefit in co-locating a solar energy facility on a property such as Meningoort to increase the overall productivity of the site by using it for more than one purpose, such as siting solar arrays on less productive parts of the property whilst maintaining a farming use on more productive parts of the property.

104 The joint expert report and evidence by Mr Poole and Mr Kenny agree on many matters. Mr Kenny's evidence differs from Mr Poole's primarily because he addresses the land's potential whereas Mr Poole is assessing the current situation. There does not appear to be a dispute between the experts that there would be potential to achieve a greater production output from the subject land with a different management regime. Unlike Mr Kenny, Mr Poole's opinion is the proposed solar farm site is not strategically significant agricultural land based on the draft Solar Guidelines. He also considers the economic output is economically insignificant at a regional and State-level.

105 We have noted where submissions and expert reports rely on verbal information by the farm manager of Meningoort. This is particularly with respect to water logging. We have had regard to the observations and inspections referred to in the expert evidence.

Findings

106 How to identify "*productive farmland that is of strategic significance in the local or regional context*" is not articulated in the scheme. The scheme, does, however, direct what is required to be considered when a non-agricultural use and/or development is proposed on productive farmland.

107 It is common ground that the subject land is not identified as of strategic significance in the scheme. This does not mean that the land is unproductive and/or does not have agricultural value.

108 We have considered the agricultural qualities of the land, such as soil quality, access to water, and access to rural infrastructure. We do not find that the subject land is poor quality. Nor do we find that it is very high quality agricultural land.

109 We accept submissions and evidence that:

- Even if the subject land is described as the poorest of the Meningoort holding,[33] it is not poor quality or unproductive agricultural land.
- The land has access to reliable rainfall (more so that land on the plains further to the north), does not require irrigation, and has been used for a range of agricultural purposes.
- The subject land is potentially capable of being more productive than occurs today. There would be ways to improve the capacity of the subject land, whether through management, modified infrastructure such as drainage, or other means. This could contribute to strategic objectives with respect to food production and diversification. The extent of the investment required, is, however, not quantified in the material before us.
- There is a history of dairying on the Meningoort holding and in the Bookaar area. Dairying occurs on properties adjacent and near to the subject land. We accept that this represents the highest value agricultural industry in the Shire and that the subject land has dairy potential.

110 Notwithstanding that there would be ways to add value, contemplate niche industries, and possibly use the land for dairying,[34] the agricultural attributes, and potential, ascribed to the subject land do not persuade us that the land is of such significance that it should be precluded from consideration for a renewable energy facility, as a matter of principle.

Loss of productive agricultural land

111 The Council and respondents submit the proposal will result in the loss of a large amount of productive agricultural land. They say this is unacceptable. The applicant submits that there will not be a permanent loss in agricultural land, because the proposal is the temporary re-purposing of the site. The

[33] If this is information that the experts relied upon from the farm manager. It is consistent with observations made for example by Mr Poole, noting waterlogging in part.

[34] These being among the considerations in table 1 of the draft Solar Guidelines, at page 12.

applicant agrees to a permit condition confirming a 30 year timeframe. The applicant further submits that the temporary loss must be balanced against broader renewable energy targets, the need to provide infrastructure to meet community demand for energy, and the environmental benefits of solar energy, particularly in reducing greenhouse gas emissions.

112 A related matter is a question of whether agriculture can continue around and within the solar energy facility, such as sheep grazing (as occurs with, for example, wind farms). Mr Cicero indicates that there is no indication that this is intended on the subject land although the permit application material had foreshadowed this possibility.[35]

113 The scheme seeks to avoid the permanent loss of productive agricultural land. We agree that the loss of 588ha, for a period of 30 years, is potentially significant, notwithstanding that the subject land, on its own, represents very small percentages of the Shire's agricultural land, the Shire's beef production and the Shire's wheat production.[36] We also appreciate that there can be no 'cast-iron' guarantee that the land would be returned to traditional farming after 30 years, even though this is the intent on decommissioning. There may be other technology in the renewable energy sector that forms the basis of a future permit applicant or amended permit for an ongoing or modified renewable energy facility.

114 The Regional Growth Plan, in its strategic directions, highlights challenges for the region in terms of economic growth strengthening and diversifying strategic economic sectors. In part, it states:[37]

> Our healthy economy faces new challenges in securing skilled workers, providing suitable employment land and improving infrastructure efficiency to allow growing and emerging industries to compete in a global market. These include:
>
> - agriculture, forestry and fishing – the cornerstones of the Great South Coast economy
> - manufacturing – adding value to our primary assets
> - new and renewable energy – a major opportunity for the region and Victoria
> - tourism – a broader and greater yield from nature-based and cultural heritage tourism.

115 This alludes to what might be regarded as an inherent tension between competing ambitions relating to the protection of agricultural land and developing the region's role in the nation's food production and encouragement for renewable energy facilities, most of which will inevitably be attracted to rural areas because of their extensive land area requirements among other considerations.

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35 As we refer to later in these reasons (under Bushfire considerations).
36 Statement of evidence of Mr D Poole, May 2019, Section 6.5, at page 24.
37 Great South Coast Regional Growth Plan (Victorian Government) May 2014, at page 3.

116 Having said that, this does not mean that any agricultural land can be lost, even for a 'temporary' period of some 30 years. Agricultural land is a valuable resource. Removing 588ha of land from primary production (reducing the opportunity for food production) is a loss and not without impact, given its current productivity, its climatic attributes, the ability to continue to use the land productively, and the contribution it makes to the economy. The acceptability of loss for a period of some 30 years must be weighed with objectives in favour of net community benefit and sustainable development. We address this question later.

117 We further note that neither of the agricultural experts believe that, on decommissioning, the subject land would not be unsuitable for agriculture or that the soil quality will be harmed. On one view, improvements to the land to address drainage may have the potential to also contribute positively to future agricultural opportunities.

Impacts on primary production on adjacent land

118 In most rural areas, renewable energy generation, such as solar energy facilities, can effectively coexist with agricultural production. This view is generally consistent with the Shepparton Panel[38] and other recent Tribunal decisions[39] where similar conclusions are reached in the circumstances applying in those cases.

119 We think it is simplistic to assume that this will always be the case. An assessment is required in the specific circumstances of each site and each proposal to ascertain what are the impacts, the degree of impact, and whether any negative impacts can be managed or mitigated.

120 Properties adjacent and near to the subject land are used for dryland farming and dairying. Part of the subject land is leased to another farmer for dryland farming purposes. We received detailed submissions from the farmers about their properties, in addition to viewing the land on inspection.

121 First, it is relevant that Mr Kenny and Mr Poole agree that the presence of the proposed solar energy facility, will not, *per se,* adversely affect primary production on adjacent land. Mr Galliene's report is consistent with this position.

122 Mr Kenny's written evidence nominates concerns raised by adjoining landholders about potential risks to agricultural enterprises.[40] They include fire risk, periodic inundation, pests and weeds, biosecurity risks associated with the solar panels, local thermal effects given the scale of the proposal, animal welfare, and the impacts of subsequent developments on economic value and the critical mass of the region and industry. Within the scope of his expertise, Mr Kenny says many of these matters are difficult to

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38 *Panel Report for the Greater Shepparton Solar Energy Planning Permit Applications 2017-162, 2017-274, 2017-301 and 2017-344*. It should be noted that of the four permit applications recommended for approval, only one has (to our understanding) been approved.

39 *ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219. *Croke v Moira SC* [2019] VCAT 112.

40 Statement of evidence of Mr S Kenny, dated 24/5/2019, at section 10 on page 20.

objectively assess, notwithstanding that he refers to the landholders' concerns as legitimate risks. That is disputed by the applicant. Mr Kenny refers to the need for effective management of the subject land and facility and states fire, flood and food safety would need to be managed.

123 We do not consider the need for effective management is in issue nor is the principle of managing the risks associated with fire, drainage/hydrology, and pest and weeds in particular. There is no information or evidence before us to conclude that there is a food safety or biosecurity risk. There is also no information or evidence before us that animal welfare, *per se,* is an issue, rather this concern is linked with other risks such as fire.

124 Second, Mr Milner refers to an "*element of severance*" that results. He expresses concerned about an area of 'no man's land' that will be created between the solar farm and Darlington Road. He refers to the narrow section of land as creating a barrier to the use of the larger agricultural plain. This, in turn, takes away opportunities for adjoining farmers and may affect the management of this farmland.

125 This concern is not shared by either agricultural expert witness nor cited as an issue in Mr Galliene's draft report. The section of land that is to the east of the subject land and west of Darlington Road is over 500 metres wide, increasing to over 1 km. It is over 5 km long. It contains multiple paddocks in various ownerships. We have not been provided with evidence or information that persuades us that there is a loss of flexibility to use different parts of the area for other purposes and, if there is, how that would affect the agricultural production of this area or its value as productive land.

126 Another issue identified in some material is the loss of land currently leased by another farmer as part of his agricultural operation. We accept that this is a loss, but it is a loss that could occur at any time without any proposal for a solar energy facility. The owner of the subject land could elect to discontinue lease arrangements at any time. This is, therefore, not an impact to which we can give influential weight.

127 Later we address the major concerns of adjacent and nearby farmers and residents about the potential for runoff to affect their land, including increased velocities, and maintenance of the drainage network.

128 Finally, we note additional objections to the proposal were presented on further grounds such as farmers' access to public liability insurance cited by Mrs Thornton. We appreciate the genuine concerns but they are not substantiated and do not carry influential weight in balancing all relevant matters.

Conclusion

129 For the above reasons, we find the proposal would result in the loss of productive agricultural land. It involves the loss of a substantial quantum of land for three decades, notwithstanding it may be a very small proportion in the wider agricultural land resource. Whether this extensive loss is acceptable must be balanced with other considerations, to which we turn

later in these reasons. We are not persuaded that the proposal would adversely affect other agricultural enterprises and operations, other than the extent to which we identify later in these reasons.

VISUAL AND LANDSACPE CONSIDERATIONS

Policy and scheme provisions

130 Mr Burge succinctly states[41] that State and local policies seek to protect the unique landscape and geological features that the western districts of Victoria are renowned for. The features include the elevated volcanic cones, wide open and flat plains that are punctuated by the many crater lakes found in the District.

131 These directions are evident through:

- State policy relating to significant landscapes[42] that seeks to protect and enhance significant landscapes and open spaces that contribute to the character, identity and sustainable environments. Among the strategies are:
  - Ensure development does not detract from the natural qualities of significant landscape areas.
  - Improve the landscape qualities, open spaces and environmental performance in significant landscapes …
  - Recognise the natural landscape for its aesthetic value and as a fully functioning system.
  - Ensure important natural features are protected and enhanced.
- State policy with respect to design for rural areas,[43] where the objective is to ensure development respects valued areas of rural character. Among the strategies are:
  - 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.
- Local policies, which we consider further below, that refer to the sensitive volcanic landscapes and the high visual quality of the Shire's significant landscapes.[44] An objective is to preserve and protect important landscape features.[45]

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41 Statement of Evidence by Mr H Burge, 28 May 2019, at section 4.4.
42 Clause 12.05-2S.
43 Clause 15.01-6S.
44 Clause 21.01-1 and 21.03.
45 Clause 21.02, Objective 2.

- While there is no express purpose in the clause 35.07 [Farming Zone] in relation to landscape protection, decision guidelines include under 'design and siting issues':
  - 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.
- Decision guidelines in clause 53.13 that include:
  - The impact of the proposal on significant views, including visual corridors and sightlines.

132 As indicated earlier, the subject land is not within a Significant Landscape Overlay [**SLO**].[46]

Other documents

Regional Growth Plan

133 The Regional Growth Plan builds on the work and directions with in the Great South Coast Regional Strategic Plan.[47] A focus in the plan is on the environmental values and assets of the region and how these can be sustainably managed and capitalised upon.

134 Directions shown on Map 7 include avoiding or minimising the impact of development on high-value environmental and cultural heritage assets, including significant landscapes. The Regional Growth Plan refers to

46 Extract from the Statement of Evidence of Mr H Burge, 28 May 2019, at section 4.2.2. The subject land is outlined in red. This extract also identifies Heritage Overlay HO80 applying to the Meningoort Homestead and associated land.

47 As stated at page ii of the Executive Study.

significant landscapes at State level near to the subject land, based on the *Coastal Spaces and South West Landscape Assessment Study* (draft).[48]

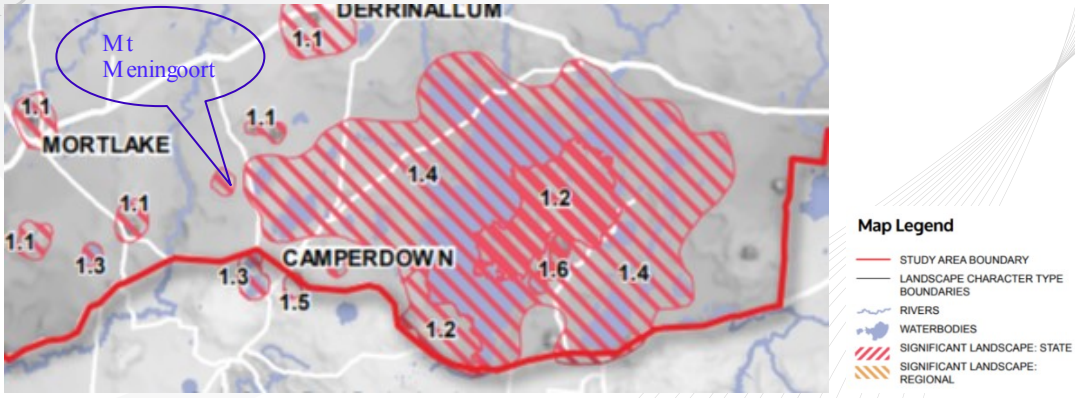
South West Landscape Assessment Study 2013 [**SWLA**]

135 The final SWLA is a relevant document.[49] A draft informed the Regional Growth Plan. The SWLA has informed expert evidence including Mr Burge's opinion about the significance of the landscape.

136 The SWLA is not referenced in the scheme. The Council advised us at the hearing that SLOs in the vicinity of the subject land were introduced prior to finalisation of the SWLA.[50]

137 The SWLA identifies landscape character types,[51] significant landscapes and significant views. The report notes that for a landscape to be classified as significant, it must have aesthetic value.[52]

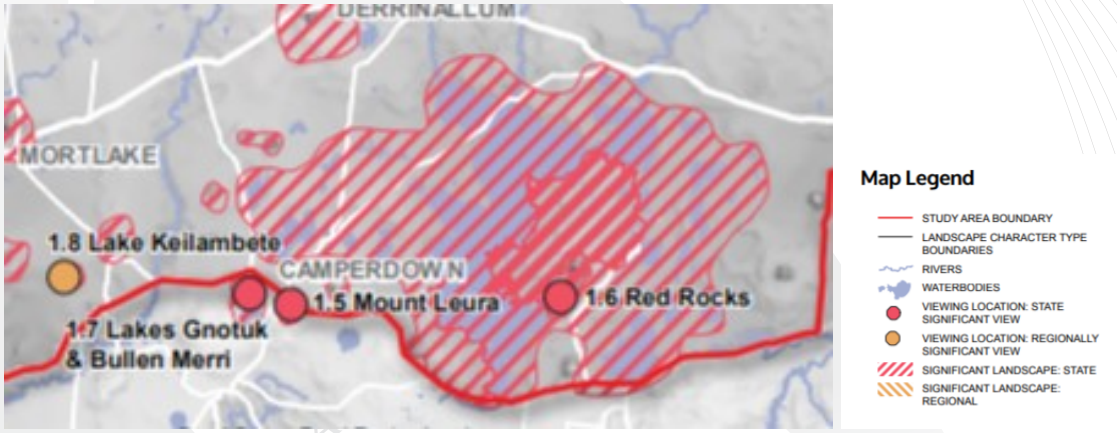
138 The subject land and wider area are part of the Western Volcanic Plains. The Southern Cones (including Mr Meningoort[53]) 1.1, the Inland Lakes 1.4 and Mt Leura Complex 1.5 are identified as of State significance. The SWLA explains the basis for these designations.[54]



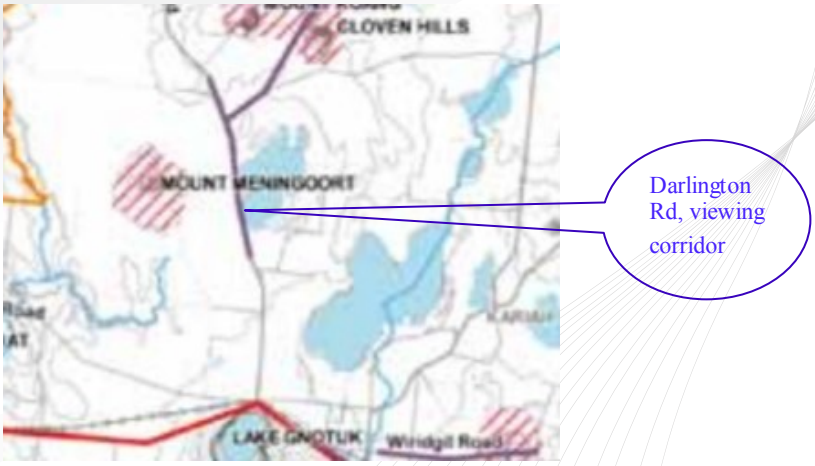
139 Two significant viewing locations are within the wider environs of the subject land. These are Significant Viewing Location 1.5 – Mount Leura and 1.7 – Lakes Gnotuk & Bullen Merri, shown below with a red dot.[55] The SWLA explains the basis for these designations including the location from which the views are assessed, the viewshed and the specific values.[56] The viewshed map from Mt Leura shows a 16 km zone of clear visibility, which includes the subject land, and a broader 32 km viewshed where only

48 Regional Growth Plan Part C, at page 33 including footnote 2 that notes this is subject to change.
49 Section 60 (1A)(g) and section 84B of the *Planning and Environment Act 1987*. The document was produced for the then Department of Planning and Community Development.
50 We were provided with further background about the amendment process at the time, which we have noted but do not recite.
51 For example in Chapter 2, at page 24 of the regional overview report
52 Page 32 Chapter 3 of the Regional Overview Report.
53 The parties agree that the map on page 35 of the Regional Overview Report shows the mountain but is unlabelled. They agree it is within 1.1 Southern Cones.
54 Pages 36 and 38 of the Regional Overview Report.
55 Extract from page 35 of the Regional Overview Report.
56 Pages 56-59 of the Regional Overview Report; Pages 22-25 and 30-33 of the Significant Views Section of the SWLA.

prominent features are said to be visible. Viewing distance is important in determining how change is perceived across a landscape.



140 The significance of the Southern Cones focuses on the high concentration of volcanic cones. Major viewing corridors include the Darlington Road.[57]



Significance of the landscape, views and vistas

141 The relevance of the landscape, as compared with visual corridors and sightlines cited in clause 53.13, was discussed through the hearing. When considering the policies and decision guidelines, and having regard to the objectives set out in State and local policy, it is clear that all must be assessed. An assessment of landscape, vistas, visual corridors and sightlines must take into account the level of significance afforded to them. At this point, we are discussing public views.

142 We agree that the SLOs are the only control protecting the landscape qualities of features and areas in the scheme. We must, therefore, accept the applicant's submission that there is a distinction between land in SLOs and farming and other land outside the SLOs.

143 Decision guidelines, and State and local policy, require us to consider landscapes, views, vistas and viewing corridors in a policy framework expressed particularly through clauses 21.01 and 21.03. The *"lake areas, volcanic cones and areas of clear pasture provide significant landscapes of*

[57] Page 14 of the Significant Landscapes section of the detailed report for the SWLA.

high visual quality". We accept respondents' submissions that the value of the landscape is not aesthetic alone. Other values attributed in local policy include historical, cultural, geological and social.

144 Despite a debate about the weight to be given to the SWLA, there is much common ground about the level of significance of the landscape, views and vistas in Mr Milner's evidence and Mr Burge's evidence. Both rely on the SWLA in referring to the landscape, views and vistas as of State significance.[58] Mr Burge's evidence is that State and local policies seek to protect the unique landscape and geological features that the western districts of Victoria are renowned for. The features include the elevated volcanic cones, and wide-open and flat plains that are punctuated by the many crater lakes found in the District. Multiple cones in SLOs are part of a wider landscape that we must assess.

145 We do not accept the applicant's submission that the views and vistas are only of local significance. On any assessment, the landscape and views from Mt Leura and Lakes Gnotuk and Bullen Merri are important and outstanding. The elevated positions are particularly significant from a public perspective. Mt Meningoort is part of the landscape, views and vistas. It is less prominent from some elevated and distant locations compared with other volcanic cones.

146 Views from Darlington Road to Mt Meningoort are different and less significant. We appreciate that clear views are obtained of Mt Meningoort from the arterial road but this cannot carry the same level of significance as, for example, Lake Gnotuk and Bullen Merri which are expressly given strategic importance and significance through local policy.[59]

Basis for assessment

147 It is important to appreciate that just because the proposed facility might be noticed or visible, to varying degrees, that does not presume or automatically equate to an unacceptable visual impact. Just because the subject is within a 16 km clear zone from Mt Leura does not automatically mean that the proposed solar facility would have an unacceptable presence. An assessment must identify the proposal's effect on landscape, vistas, visual corridors and sightlines and then determine the scale of impact. The degree of visibility from any location must take account of many variables, including topography, vegetation, time of day/year and weather conditions.

148 Mr Burge's analysis is careful and thorough. The methodology is explained and distinguishes between the criteria for assessing visual impact for publicly accessible and residential viewpoints.

149 The evidence documents its assumptions, including a maximum solar array height of 4 metres and a 20 metre wide landscape buffer around the facility

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58 Mr Glossop provides general comments only with respect to visual impact and defers to other evidence.

59 Such as clauses 21.03-2 and 21.04-12

with one row of trees.[60] Fixed and tracking systems are both considered. The assessment is assisted by a photomontage as well as his review of the series of photomontages prepared by Mr Goss and presented by the Council.[61] Mr Milner selected the locations from which Mr Goss' photomontages were prepared.

150 Mr Burge uses four criteria for 10 public viewpoints - visibility, distance, landscape character and viewer sensitivity, and number of viewers. The scale of effects are assessed in a range from negligible to high visual impact.[62] The methodology and criteria have not been expressly challenged. We appreciate, however, that:

- People may ascribe different weight to the criteria;
- Perceptions about the scale of impact can vary; and
- People may consider other values should be relevant to the visual impact assessment, such as heritage.

151 Mr Burge states the following with respect to his assessment of residential viewpoints:[63]

> An assessment of viewer numbers is not applicable, nor is landscape sensitivity. Sensitivity at a residential dwelling and the immediate areas of attached private open space is always rated as high. This high sensitivity recognises that people feel most strongly about the view from their house and from their outdoor living spaces. The visibility of a solar farm and the distance between the residential location and the project are the two criteria that vary within an assessment of the visual impact from a residential property.

152 We accept Mr Burge's is approach. It is not expressly challenged.

153 Mr Johnson and several other parties criticise the images and photomontages presented in Mr Goss' evidence and Mr Burge's visual impact evidence. They contend the modelling and selected viewpoints omit key locations, such as parts of the Botanic Gardens. Having inspected the locations the respondents refer to, as well as those included in Mr Burge's and Mr Goss' evidence, we do not accept the respondents' criticisms. The material has not selected locations that would intentionally, or otherwise, downplay potential impacts.

154 We further record reference in some submissions to the Tribunal's decisions in *ESCO* and *Croke*, in terms of comparing distances from which solar facilities would be viewed. These comparisons do not assist us; each proposal must be understood in its own setting and based on its own facts.

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60 The proposal is for four rows of trees in the 20 metre wide perimeter landscape buffer, although Mr Burge does not consider this extent of mitigation is required, as we discuss later.

61 This includes enhancements of the montages prepared by Mr Goss of Orbit Solutions.

62 Section 6 sets out the methodology in greater detail.

63 Section 6 sets out the methodology in greater detail.

Impacts

Overview of parties' positions

155 Mrs Howley's submission captures the key issues seen by many of respondents with respect to the visual impacts of the proposed development in this landscape and with respect to specific viewpoints:[64]

> The current Bookaar landscape reflects the local history, development and culture in subtle ways that do not, as yet, interfere with the significant overlays of the Meningoort property in particular, or the volcanic lakes and plains in general. The introduction of an industrial sized solar power station, which is equal to some of the largest in Australia will not sit well in this 'inappropriate' setting. Its introduction will change this landscape from a rural 'grass' vista to an unnatural 'glass' vista covering some 1500 acres (600ha) immediately to the west of Lake Bookaar. It will introduce a massive industrial feature into the pleasant rural landscape. It will also impact our important rural and geological tourist views from local view points and Significant Landscape and Historical Overlay areas, including Mt Meningoort.

156 Respondents refer to the expansive views and the way in which the landscape is three dimensional and unique. They attribute degradation of natural beauty and aesthetic impacts to factors including the size of the proposed facility, the inability to adequately screen the facility (particularly in the early years of the proposed development), and the introduction of extensive planting that is at odds with the windbreaks that form part of the landscape.

157 Some respondents contend that screening will greatly change the historic landscape. The plantations will have the effect of framing the extensive area of solar panels and therefore make them stand out more as an unnatural feature of the wider landscape.

158 The Council submits the proposal will cause unacceptable landscape and visual impacts within the local area and from key viewpoints. Mr Milner's evidence describes the proposed size, shape, location and orientation of the solar farm in this landscape setting of State significance as "*ill-conceived*" and without appropriate attention to minimise its impact. His criticisms include the following:[65]

- Siting the facility at the eastern margin of the host property "*protects the balance of the land for private benefit but places it closest to neighbours, the public domain and vantage points of the Southern Cones*".
- The solar farm is directly in the foreground to Mt Meningoort which is particularly problematic for the appropriate appreciation of landscape values.

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64 Mrs Howley's written submission, at page 8 of 128, paragraph 25.
65 Statement of evidence by Mr R Milner, May 2019, at Section 5.2.

- This concern is compounded by the length of the arrays, at some 5.4 km in a straight line, parallel to the main road.
- When viewed from Mt Leura or the Darlington Road, the proposed facility stretches across the landscape rather than seeking to shrink or minimise its presence.

159 The applicant relies on Mr Burge's evidence that concludes:

> Although the project has a large footprint, the proposed solar panels will form a small element in views from the area surrounding the project. While there would be a change to views, the visual impact would be minor for even the most sensitive of viewers.

160 Mr Burge's evidence is that the proposal will not (among other conclusions) cause unacceptable landscape and visual impacts within the local area and from key viewpoints; will not degrade the natural beauty of the area; will not appear as a blight on the natural landscape contrary to both State and local policies; and will not impact in any appreciable way on the rolling green pastures, crater lakes and mountains.

161 With respect to private realm impacts, Mr Milner refers to the size and length of the solar farm positioned "*across the outlook of neighbouring properties including homes occupied for lifestyle benefits, whose principal view has been across the agricultural plain*". The open aspect and panoramic views will be affected because of the scale of the facility that is uncharacteristic. Respondents agree. Mr Johnson and Mr and Mrs Marburg raise concerns including the industrial look of the facility, the lack of sufficient buffers, the size of the development, visibility and inadequate medication of visual impacts particular given time taken for vegetation to grow.

162 Through the evidence and submissions are different opinions about:

- Whether perimeter landscaping should be contained within a 20 metre wide buffer (as proposed) or a 50 metre wide buffer (consistent with existing landscape belts on the Meningoort property).
- Whether the proposed buffer should contain:
  - One row of trees (Mr Burge, and, in his opinion, that may not be required), or
  - Four rows of trees (as proposed in the substituted plan), or
  - Seven rows of trees (cited in advice appended to Mr Burge's evidence from a local plant supplier).[66]
- Whether perimeter landscaping should extend around the whole of the proposed facility, or only in part.
- The likely success of landscape buffer planting, given the soil and climatic conditions.

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[66] The letter indicates that less rows could not achieve the required cover at maturity. Mr Dunyhoven tendered a further letter later in the hearing from the same supplier.

- Whether advanced species or tube stock should be used for boundary planting (Mr Kern's firm opinion being that tube stock will achieve a better outcome).
- How the proposed landscaping works with fuel load management for bushfire management.

Findings

Public Realm views

163 For such a large facility, opportunities to see it from the public realm are limited to the local road network, the Darlington Road, and elevated viewpoints associated with volcanic cones.

Various points along Darlington Road

164 The arterial road is to the east of the subject land. It carries some 600 vehicles per day,[67] including trucks which would view the subject land from an elevated position. A speed limit of 100 km/h operates although some traffic will move slowly, as several respondents highlight.

165 The solar facility would extend for a length of more than 5 km effectively parallel with the west side of Darlington Road. It would be set back between approximately 580 metres to 1.2 km from this road. Intervening paddocks separate the subject land from the road. Roadside and paddock planting is variable. There are open views across the subject site to agricultural land beyond, and, in some locations, Mt Meningoort is prominent.

166 Multiple vantage points have been assessed along the length of Darlington Road. These take into account the road profile as well as existing and proposed vegetation. The existing transmission lines have a notable presence.

167 Notwithstanding the substantial length of the facility, the facility would not have an unreasonable visual impact. This is because of the low profile of the solar arrays and the distance between the viewer and the facility. While Mr Burge's evidence is that the impact is acceptable without perimeter landscape screening, we accept with his opinion that proposed vegetation would reduce the visibility of the facility over time.

168 The solar energy facility and its landscaping will appear as a foreground element to Mt Meningoort. The breadth of the facility will be understood. However, this does not equate to an unacceptable degree of prominence or intrusion so as to adversely affect or undermine the values attributed to the SLO1. We do not consider the proposal would detract from the tourist experience in a significant way.

[67] Based on Mr Gnankone's evidence. It is noted that this traffic volume information from VicRoads is at a point approximately 1 km to the north of Blind Creek Road.

169 We further accept Mr Burge's assessment that, to the extent that infrastructure such as a substation would be seen, it would not be a dominant or unacceptable visual intrusion.

Various points along Park Lane

170 Park Lane is to the west of Mt Leura and some 8 km to the south-east of the subject land. Multiple dwellings are located along the north side of this road, on large lots. Outstanding views from the public realm are gained between some dwellings and over some existing private open spaces around the dwellings. However, landscaping associated with these properties limits or filters expansive views.

171 We accept Mr Burge's assessment that although the solar facility may be visible, it will not be a dominant element. Proposed landscaping would further filter views and limit visibility over time.

Mt Leura

172 Given existing vegetation near to the summit of Mt Leura, views to Mt Meningoort and surrounding land are concealed when standing at the information viewing point. We accept vegetation management and pruning may open up views from the summit.

173 Mr Goss' photomontage is taken from a position further west, along a track, where views become possible, based on existing conditions. It will be possible to see the proposed facility, approximately 10 km to the north-west of this elevated viewpoint. Views here are expansive and, in fine and clear conditions, take in farmland, townships, volcanic cones and lakes. Two small quarries to which we were referred lie close to the base of Mt Leura and can be distinguished from the panorama and its distinctive landscape features that are the main focus.

174 The proposed facility will not be a substantial element in this broader context and panorama. We agree with Mr Burge that it would appear as part of the diverse agricultural landscape which changes seasonally depending on the agricultural regime. Weather is another influence.

175 Respondents describe the way in which the solar energy facility will be clearly visible and larger than Lake Bookaar. The facility may be similar in surface area, when the lake contains water, however its configuration and dimensions are substantially different. While a foreground element to the volcanic cone of Mt Meningoort, we do not consider the low-lying but wide development is such an intrusion and distraction in the views and landscape so as to conclude the outcome is unacceptable.

Lake Gnotuk and Bullen Merri lookout point

176 The viewing point for the two lakes is on the west side of the Camperdown Botanic Gardens. The subject land is approximately 7.3 km at its nearest point.

177 Here, views overlook Lake Gnotuk and Bullen Merri, to the west and north-west. A Eugene Von Gerard landscape painting is displayed on the information board at the car park overlooking the two lakes and wider landscape.

178 We agree with Mr Burge that, from this point, the proposed development would not be visible. Therefore, it would not compete with key views towards these features. Views to the north towards the subject land are screened by existing topography and vegetation.

Other parts of the Camperdown Botanic Gardens

179 Moving around the Botanic Gardens, including further north, views to Mt Meningoort and its environs are possible. This is evident in our photograph below. This is similarly the case when viewing from the caravan park further east of the Botanic Gardens.

180 The ability to gain views of the subject land varies because of factors such as the presence of trees, seasonal influences in the landscape, and weather conditions. Some trees, such as cypress, may be removed in time thereby exposing more views of the solar energy facility. Even so, at the distances involved, we do not consider the proposal would fundamentally change one's appreciation of the landscape, views, vistas and viewing corridors.

Private realm views

181 The closest dwelling is approximately 450 metres from the boundary of the proposed facility. This dwelling is on the west side of the Darlington Road. Five other dwellings are within 1 km of the proposed development, east and south of the subject land. There are additional houses at further distances

and, we were informed, another to be constructed on small lot east of the Darlington Road.

182 We have had the benefit of viewing several of the dwellings and their surrounds, including the properties of Mr Johnson and Mr and Mrs Marburg. Visibility of the proposed development from dwellings and surrounding gardens/land will vary.

183 For example, Mr and Mrs Marburg's property is on the east side of the Darlington Road, with the garden framed by substantial vegetation. Views to the proposed facility from the garden and dwelling are substantially limited or not possible. Views will be gained when departing the property onto the Darlington Road.

184 Mr Johnson's dwelling is on the west side of Darlington Road, with significant planting around property. There are some open sections around the garden and vegetable beds where the facility would be obvious. Mr Johnson points out the landform that dips west of his property that particularly exposes views.

185 Other dwellings, including the closest dwelling, have extensive plantings around the dwelling and private open spaces. They do not have expansive views because of their own plantings.

186 We do not downplay the concerns being raised but it is clear that the dwellings on small lots have mostly contained and protected themselves. In addition, the subject land is set back sufficient distances from these small residential lots, and other farmhouses, and will be buffered by a landscaped edge. The proposed landscaping would have a similar appearance as other windbreak and shelterbelt plantings, albeit longer than some other examples in the landscape. Views to Mt Meningoort and over the wider plains would remain.

187 The impacts on residential amenity and outlook do not warrant refusal of a permit. We accept Mr Burge's analysis that the proposed landscape plantings around the site boundary will mitigate views that could be gained from dwellings east and south of the subject land.

Character

188 We are not persuaded that a permit should be refused because of concerns that the solar facility is at odds with the rural character and ambience. It is true that the existing character would change, including through the introduction of new fencing and perimeter vegetation. However, for the reasons given above, the visual impact is not unacceptable and will not intrude unreasonably on the features in SLO1.

189 The extent of proposed planting creates landscape belts that are longer than many others but not exclusively so.[68] We do not consider that this *per se* is a reason to conclude the visual impact of the solar facility is inappropriate.

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[68] As demonstrated in images at pages 32 – 33 of the applicant's opening submission.

We further note that perimeter planting has potential benefits with respect to managing glint and glare off-site.

190 We do not consider the proposal would fundamentally change the rural and agricultural character associated with farmland that sits between cones west of the lakes and wetlands.

Other matters

Buffer width and planting

191 We are satisfied that landscaping within a 20 metre wide buffer, as proposed, is acceptable and sufficient. We have not been persuaded that a 50 metre wide buffer is required to mitigate impacts nor is there a planning reason to match landscape belts on the balance of the Meningoort property.

192 We appreciate that there are locations where, for example, on the Darlington Road perimeter planting around the whole of the subject land might not be necessary when views might be intercepted by existing planting adjacent or near to the subject land. There is, however, no proposal before us as to where shorter sections of the proposed landscape buffer could be strategically positioned.

193 We agree with Mr Kern that tube stock be used. That could take the form of four or seven rows, but a minimum of four appears appropriate when assessing the information and evidence. We were shown examples of shelter planting that have been described as taking many years to grow and as being successful. With appropriate species selection, soil preparation, management and maintenance, we find no reason to conclude that proposed buffer planting will not achieve the anticipated mitigating effect.

194 We also find that landscaping should be installed prior to the installation of the solar panels, subject to seasonal considerations. This matter was discussed by the parties on a 'without prejudice' basis with respect to possible permit conditions. It is not opposed by the applicant.

Relationship between landscaped buffer and fire management

195 The substituted plan shows a 10 metre wide fire break inward of the proposed landscape screen. A 2.5 metre chain mesh fence would also be positioned inward of the landscape screen.

196 The CFA appears to accept this arrangement, noting more access points may be required than the single point shown in the substituted plan. It appears that this matter would require further detailed consideration, as we discuss below in addressing bushfire.

MENINGOORT HOMESTEAD/ EUGENE VON GERARD

197 The Meningoort homestead is listed on the Victorian Heritage Register. An iconic work by Eugene Von Gerard was painted from the volcanic cone of Mt Meningoort, upslope and behind the dwelling. It was painted in 1861. Views to many of the volcanic cones were gained, including Mt Leura. The

location is associated with the Meningoort homestead and the property's aesthetic significance is linked to the painting.

198 The VHR listing explains the modifications made to the dwelling. These are evident when seeing the painting and our photograph[69] taken in a location viewing over the top of the homestead. Vegetation has grown around the dwelling, some of which is recorded on the VHR. Vegetation now masks views to Mt Leura, as Mr Burge observes.

199 The subject land is approximately 1.2 km east of this viewpoint. The subject land is not within the SLO1 nor HO80.

200 Respondents contend that a large scale solar facility is inappropriate when looking out from the SLO of Mt Meningoort or outwards from HO80. Mrs Howley submits that:

> Instead of pleasant rural vistas which are sympathetic with the overlays, the viewer will be confronted with either a four metre wall of glass and metal solar arrays or eventually, a ten metre high forest of trees which will cast considerable morning shadows over the heritage homestead precinct.
>
> This will forever change Meningoort's 'old English garden' appearance and heritage setting.

201 We were advised that at least three of the artist's acclaimed paintings, and a series of geographically important sketches, are from the Meningoort property.

202 We do not accept submissions that the proposed development will negatively impact on the Heritage Overlay or SLO1 (Mt Meningoort). We are unable to agree that the proposed development will adversely affect the integrity of the heritage place and its setting. Just because the solar facility could be seen, to varying degrees from the heritage-listed land and place, this does not equate to an unaceptable advserse effect on the place.

203 It is relevant to our finding that the proposal is acceptable with respect to its relationship with the Mt Meningoort Homestead and volcanic cone that:

- The view from this location is altered from the image painted by Von Gerard, with matured trees and paddocks beyond.

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69 Taken on our accompanied site inspection.

- The iconic Von Gerard view, and views from the Mt Meningoort volcanic cone, are from the mountain slope behind the dwelling and are not generally available to the public. The limited public access is a relevant consideration.
- The solar energy facility would be masked from this location, by the plantings on the Meningoort property.
- Closer to the gardens immediately associated with the Homestead the solar energy facility would not be obvious or dominant. It would be effectively masked by vegetation.

DRAINAGE, RUNOFF AND FLOODING

Policy and scheme provisions

204 The suitability of a site for development must consider the topographic and hydrological conditions on-site and off-site.

205 Relevant policies require us to:

- Assist in the conservation and wise use of natural resources including energy, water, land, stone and minerals to support both environmental quality and sustainable development.[70]
- Assist the protection and restoration of catchments, water bodies, and groundwater[71] with strategies including:

  Consider the impacts of catchment management on downstream water quality and freshwater, coastal and marine environments.

  Retain natural drainage corridors with vegetated buffer zones at least 30 metres wide along each side of a waterway to:

  - Maintain the natural drainage function, stream habitat and wildlife corridors and landscape values,
  - Minimise erosion of stream banks and verges, and
  - Reduce polluted surface runoff from adjacent land uses.

  Require appropriate measures to filter sediment and wastes from stormwater prior to its discharge into waterways, including the preservation of floodplain or other land for wetlands and retention basins.

  Ensure that development at or near waterways provide for the protection and enhancement of the environmental qualities of waterways and their instream uses.

  Ensure land use and development minimises nutrient contributions to water bodies and the potential for the development of algal blooms

- Protect water quality[72] with strategies including:

70 Clause 14 Natural Resource Management.
71 Among the matters in clause 14.02-1S.
72 Among the matters in clause 14.02-2S.

> Discourage incompatible land use activities in areas subject to flooding, severe soil degradation, groundwater salinity or geotechnical hazards where the land cannot be sustainably managed to ensure minimum impact on downstream water quality or flow volumes.

- Sustainably manage drainage and stormwater through an integrated management approach.[73]

206 Local policy addresses these matters with an objective to ensure development is only permitted where the risks to life, property and community infrastructure from flood is low.[74] Strategy 1.4 is to ensure environmental risks, constraints and hazards are fully considered in proposals for the use, development and subdivision of land.

207 In addition:

- The decision guidelines in clause 53.13-3 require consideration of the impact of the proposal on the natural environment and natural systems.
- The decision guidelines in clause 35.07-6 include:
  - The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.
  - The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.
- The decision guidelines in clause 65.01 include:

> Factors likely to cause or contribute to land degradation, salinity or reduce water quality.
>
> Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.

208 As stated in the draft Solar Guidelines, *Water for Victoria* (2016) sets out water policy in Victoria and long-term strategies for managing the State's water resources. It highlights the importance of rural water infrastructure for future growth in the agriculture sector, and emphasises the need to maximise benefits for the community when considering questions of land use change and the water grid.

Impacts

Overview of parties' positions

209 In September 2018, Infinergy wrote to the Council responding to objections made to the permit application. The letter says that one of the reoccurring issues highlighted in the responses to the proposal is the potential effect the solar farm could have on drainage in and around the site. It refers to a flood

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73 Clause 19.03-3S.
74 Clause 21.03-3.

risk and drainage risk assessment commissioned by the proponent.[75] We do not recite all of that opinion by Eco Logical, given in June 2018. In part it states:[76]

> The objective of this assessment is to provide a high-level assessment of the flooding and drainage risks relevant to the Project Site and surrounding sites in relation to the proposed development activities and to provide recommendations should any medication activities be required.

210 The applicant submits the proposed development will not create any unacceptable flooding impacts either on the infrastructure on the subject land or to adjoining properties. It relies on the Dr Jempson's evidence. The expert evidence refers to absence of existing flood data or modelling for the site. It sets out assumptions (such as drain capacity in a 1% AER event). Dr Jempson states that converting pervious services to impervious surfaces and connecting them to a drainage system can have the effect of increasing the runoff. This will not be the case of the solar panels because at ground level the amount impervious surface is substantially unchanged.

211 Dr Jempson proposes parameters for the development of the land. A key position that there is to be no increased runoff off-site. Dr Jempson considers a flood modelling assessment at the detailed design stage can identify the 1% AER flood extent, levels, depths and velocities. That model should be used to demonstrate that there will be no unreasonable increase in flood levels and flow velocities compared with the existing conditions. The inverter station substation battery storage facility and operational building should be positioned at least 300 mm above the 1% flood level. No solar panels should be located in the drainage reserve but some of the panels may be located within the land that is flooded in a 1% AER event.

212 Dr Jempson expects that:

- The depth and velocity of flooding will be generally low, however, there will be need for a management plan.
- Flow velocities are expected to be sufficiently low to not cause damage to support piles and frames, given the floodplain terrain is relatively flat.
- The model could be used to identify required changes to the design to mitigate these impacts. These should be readily resolvable. It may include, for example, changes to culvert sizes under tracks, modifications to track embankment heights, or putting buildings on stumps.
- No assessment of groundwater has been undertaken because the increase in the impervious service will be insignificant.
- A change to the infiltration of water to the water table will also be insignificant.

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75 Letter dated 17 September 2018 to the Acting CEO of the Corangamite Shire Council.
76 Eco Logical, dated 6 June 2018, Under the heading "This advice".

213 Dr Jempson's evidence relies on 8% impervious surfaces, a figure derived from the Eco Logical report from June 2018. Dr Jempson's estimate is approximately 2.5%, with further information about this figure provided through the applicant's closing submission. The applicant's submission is that Dr Jempson's analysis is conservative. Further, Mr Cicero proposes a permit condition to limit the impervious area to not more than 4%, which is significantly below the assumption used in the expert evidence.

214 This is the only expert evidence before the Tribunal on this matter. The applicant emphasises that no other party has called evidence with respect to drainage. This, Mr Cicero says, is despite an opportunity to do so (referring to a statement of grounds foreshadowing expert evidence). Further, the Council has not raised flooding or drainage in its grounds of refusal nor does its internal referral oppose the proposal on flooding drainage issues. Authorities such as the CMA and Department have not opposed the application on flooding or drainage issues subject to the inclusion of conditions. The applicant highlights the decision to grant a permit in *Croke* where the subject land was affected by flood-based overlays in the relevant planning scheme.

215 Although the Council has not referred to hydrology and drainage as an issue, we observe that Mr Galliene's report states there is no evidence that the proposed solar energy facility will have any impact on the natural physical features and resources of the area, in particular on soil and water quality. The report does, however, refer to the chemical and physical nature of the dominant soil type within the proposed project area, the lack of slope across a site, and the current drain with water pooling during winter/spring. The report states a drainage plan is required that must include a scheduled maintenance program.

216 Respondents argue that the impacts of the development are uncertain and unresolved. In particular, Mr Duynhoven, Mr Wilson and Mr Smith all describe their land and drainage associated with it. Some of the land is low-lying. Their land receives runoff from the subject land. Mr Duynhoven, Mr Wilson and Mr Smith have explained their drainage and pumping arrangements. Part of the land that they, and Mr Towner, farm is a former swamp.[77] Mr Duynhoven, Mr Wilson and Mr Smith contend that there is insufficient information to understand how stormwater runoff and drainage will be managed. This underpins their strong fears and concerns that there will be increased flows and velocities of flow affecting their land and potentially their agricultural production. By way of example, pooled water for extensive periods of time may waterlog and destroy a sewn crop.

217 Respondents criticise the expert evidence and material the applicant relies upon including the failure to consider, or fully consider:

- The extent of impervious surfaces and siting of solar arrays.

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[77] The location of swampland is shown on a plan tended by Mrs Mahony. That aligns with the swamp notionally identified on a topographic plan tendered on behalf of the applicant on the final hearing day.

- Concentrated surface runoff, that is, the difference between rainfall runoff associated with 700,000 panels compared with absorption through pasture grasses.
- Whether raised mounds for tree planting and access roads will create unintended barriers to water flow.
- How infrastructure such as cabling and inverters influence hydrological conditions.
- How grass management will influence infiltration and runoff.
- Maintenance of the drain that aligns with the eastern boundary of the subject land. [The applicant has agreed to maintain this drain].
- The region's aquifers, having regard to the Strategic Management Plan for the Western District Lakes Ramsar Site that refers to the complicated nature of aquifers that "*almost certainly do not correspond to the surface drainage catchments as defined by the surface topography*".[78]
- Potential changes in groundwater, which may be related to the shallow lakes east of the subject land.[79]

Findings

218 Mr Cicero challenges the Tribunal's capacity to assess the complex technical nature of hydrology. We reject the notion that we are unable to interrogate evidence of this nature and, in any event, there is no model to be assessed because this work has not been done.

219 The subject land is not affected by any of the flood-based overlays in the scheme. An assumption has been made in this permit application that because the subject land is not within a Land Subject to Inundation Overlay or Flood Overlay that it is not subject to flooding. The applicant explains that the lack of overlays over the subject was influential in the design of the original site plan, although we note drainage lines were identified.

220 It is common ground that there are drainage lines across the site. We agree with Dr Jempson that the absence of flood-based overlays in the scheme does not mean the subject land is not subject to flooding in a 1%AER event. Dr Jempson states some of the site would be inundated in a 1% flood event, although the extent of floodwaters, water depth and flow velocities of flow are unknown.

221 The report accompanying the permit application states that it is a high level assessment of the flooding and drainage risks relevant to the project site and surrounding sites.[80] A desktop drainage and flood risk assessment was undertaken.

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78 Parks Victoria cited in Mrs Howley's submission, including at page 50 of 128, paragraphs 221-223, footnote 28.

79 Mrs Howley's submission, at paragraphs 224 – 228 citing a report prepared by the CSIRO for the Corangamite Catchment Management Authority.

80 Eco Logical 6 June 2018.

222 Multiple pieces of information assist to highlight the subject land's position in the topography and its role in the drainage network. These include:

- Information submitted with the permit application showing drainage lines, although we observe that drainage lines shown in the planning report accompanying the permit application do not correlate with the Eco Logical advice.
- Historical and current mapping showing the swamp.
- Swampy conditions and waterlogging cited by the Meningoort farm manager referred to by witnesses called by the applicant throughout the hearing.
- Comments from farmers in the consultation process prior to the permit application being lodged.
- CMA advice that refers to some drainage lines as designated waterways.

223 We expect that drainage lines and waterways will influence the layout of a development such as that before us. Flooding in array areas could create multiple issues dependent on factors such as water depth and velocities. Construction may have the greatest potential impact but a hydrological assessment is the means to inform the design and mitigation measures. There could be ways in which water is retained for other use (such as for livestock) or to reduce flooding of adjacent land that creates issues for neighbouring farmers.

224 Topography, soil types and the location of drainage lines and waterways are among factors that influence the volume and flow rate of runoff as well as sediment loads.

225 Uncertainties in the material before us include the following:

- The evidence assumes flooding will occur on the subject land but cannot say where it will occur, at what volumes, to what depth and at what flow rates.
- The applicant stresses that the Tribunal does not need to know exactly where solar arrays are to be located. We do, however, need to understand where banks of arrays are proposed, how they are sited relative to drainage lines, to what extent re-grading is required, and whether arrays are proposed to be set back from waterways. The Rina plan shows solar arrays in the southern part of the site where the substituted plans refer to a 'drainage reserve'. The substituted plans do not show any separation between that reserve and solar arrays. We are unsure where inverters may be located with respect to drainage lines.
- The estimate of impervious surfaces is based on the Rina plan, which does not form part of the substituted plans. The estimate of impervious surfaces:

- Does not include the solar arrays, as these are assumed to be pervious.[81] It also does not specify what spacing between solar panels was assumed in forming the view that the arrays should be treated as pervious elements.
- Includes access roads around the land. The substituted plan shows one firebreak but no internal access tracks whereas the Rina plan appears to show more. We do not know how many internal access tracks are required for operation and/or fire access purposes and whether they may change the assumptions upon which the expert evidence is based. There is no indication whether soil compaction and re-grading will occur - this being relevant to factors such as runoff and velocities.

- If raised above the natural surface, access tracks may obstruct runoff from the site and flow within the 1% flood event. Similarly, the proposed perimeter landscape beds may be built up by 10-20cm for tube stock, based on Mr Kern's evidence.
- Rain falling on 700,000 tilted solar panels is also likely to pool and run off in a different way to rain falling on open pasture. We have no information to assess this potential difference in flooding or surface flows.
- The evidence is that if cabling above ground is used, it would be on poles and any obstruction to the flow paths would be insignificant. It is noted that the applicant's instructions are that cables will be underground, including under drainage lines. Again, we have no information about the outcome of this, such as with respect to soil compaction and re-grading.
- Off-site flood levels and velocities could be increased by blockages to flow paths, increasing the runoff from the site or poor maintenance of the drainage channels. It is noted that the applicant agrees to maintain drainage channels, including that drain abutting the eastern boundary. Balustrade fencing is recommended to be used, at least up to the 1% flood level, to reduce the potential for debris collection.
- If retarding basin/s and more culverts are required, the location/s are unknown.

226 All of the applicant's evidence and submissions are based on the solar panels being a maximum of 4 metres in height. Should there be any need to raise the height of the panels to address hydrological considerations, that may, or may not, have an impact on other expert assessments.

227 Notwithstanding that it did not formally object, in our view, the Department correctly identified the lack of a hydrological study as a deficiency with the permit application material. It still says the application, and expert evidence, do not document how proposed works will not cause off-site effects.

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[81] Advice from Dr M Jempson to Best Hooper dated 27 June 2019, tendered by the applicant.

228 We do not consider that dealing with drainage by permit conditions, which the applicant states is the typical approach, is appropriate in the circumstances of the subject land and downstream properties when also considering the scale of the proposed development. Imposing permit conditions that require maintenance of pre-development flows is common in urban situations, as the applicant submits. However, we have not been provided with evidence or information to demonstrate what the implications are for the project and its layout. Here, the land is being developed from paddocks (some of which are subjected to waterlogging and inundation) to a solar energy facility with a different operational regime.

229 The subject land and its environs have sensitivities which we find have not been sufficiently addressed to provide us with confidence that the impacts have also been properly identified and can be managed without other consequences. There may be implications on the wider catchment and waterway health which are not apparent.

230 We do not derive confidence from the *Croke* decision. Among the obvious distinctions between the proposal being considered in that proceeding and the Bookaar proposal are:

- The smaller scale of the facility (125,000 panels on a 124ha site compared with 700,00 panels on a 588ha site).
- The nomination of a specific flood level in the *Croke* proceeding that enabled the technical assessment before the Tribunal to indicate, for example, that internal access tracks should be raised and to consider panel locations relative to drainage lines.
- The ability of the expert witness in the *Croke* proceeding to provide parameters to avoid increased flows and velocities - as set out in the Tribunal's decision where the maximum height of access tracks and setbacks from drainage lines are specified.
- The information on the application plans including a deep buffer from a river.

231 For these reasons, we are not satisfied that the substituted plans have been informed by, and sufficiently address drainage and runoff considerations. In part, this may stem from the early position adopted in the permit application that flooding was not a significant issue or constraint. It remains unresolved.

BUSHFIRE

Scheme policy and provisions

232 State policy addresses bushfire considerations in decision-making about planning permit applications.[82]

233 Bushfire risk and assessment is relevant to the proposed solar facility. This is the case even though the subject land is not within a Bushfire

[82] Clause 13.02-1S.

Management Overlay. State policy applies to land within a bushfire prone area and where land is "*Proposed to be used or developed in a way that may create a bushfire hazard*".[83] It includes:

- The policy objective to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.
- Strategies with respect to the protection of human life that include reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.
- Strategies with respect to identifying bushfire hazard and undertaking appropriate risk assessment which, among others, are:

  Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have been addressed, performance measures satisfied or bushfire protection measures can be adequately implemented.

234 Clause 13.01-1S also includes strategies for use and development control within bushfire prone areas, of which the proposed use and development. The permit application before us is not one of the listed land uses in this part of the policy and (other than during construction) does not result in "*people congregating in large numbers*".

235 Local policy addresses these matters with an objective to ensure development is only permitted where the risks to life, property and community infrastructure from bushfire is low.[84] Strategy 1.7 is to implement bushfire risk assessment and mitigation measures to reduce the overall risk to communities and protect human life and property.

236 Clause 65.01 requires considerations 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.

Other relevant documents

237 The CFA has referred to *Guidelines for Renewable Energy Installations*, CFA, February 2019. This forms the basis of its position and recommended permit conditions.

Overview of parties' positions

238 The applicant relies on Mr Kern's evidence, and the CFA's lack of opposition to the permit application, in support of its submission that the proposal does not result in an unacceptable fire risk. It also relies on the Tribunal decisions in *ESCO*[85] and *Croke*.[86]

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83 Clause 13.02-1S.
84 Clause 21.03-3.
85 *ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219, [118]-[121].
86 *Croke v Moira SC* [2019] VCAT 112, [70]-[71].

239 The applicant states defendable space must be maintained across the solar farm site according to CFA standards during the declared fire season, if the permit is granted. The permit application material states Infinergy intends to conduct much of this fuel reduction through grazing sheep so that agricultural production can be maintained to some degree. If it is not possible to use sheep, the applicant advises that the company is confident mowing can be done if required, whether partially or completely across a site. A performance standard of maintaining defendable space must be met through whatever technique is used.

240 Mr Kern's evidence refers to CFA and other guidelines. He observes an important factor with respect to bushfire safety on the site over time is the number of workers that will be present on the site each day and available to monitor and deal with any bushfire issues. He refers to the planning permit application that states up to 12 people will be working on the site each day during the life of the solar farm. Even if this is six people,[87] his evidence is that the number is much higher than the number of farm workers that might be working on the entire property or a similar farm if the solar energy facility was not present. Mr Kern states that the workers will be trained to, and can, implement required fuel reduction works, monitor the site for fire ignition in the fire season, and respond to bushfire incidents.

241 Mr Kern's evidence also includes that solar panels are not at high risk of fire when they are not on roofs or near flammable structures.

242 Mr Kern states a solar farm should not significantly increase wind speeds and associated local bushfire risks either on or off the solar farm site because of the limited height and bulk of the solar arrays. In cross-examination by the CFA, Mr Kern says there could be heat above the solar panels but could he not be more specific on this point. His evidence is that the slight increase in wind in limited locations can be addressed in the bushfire emergency management plan.

243 In cross-examination by Mr Smith, Mr Kern acknowledges that there may be peat soils, but this is unknown. He considers this matter should be analysed knowing that peat is a big risk. He is unsure whether it adds significantly to the risk in this case.

244 The CFA expects a Fire Management Plan to be part of the Emergency Management Plan. It submits hazards, risks and controls need to be identified and implemented to ensure fire risk is managed by far as is reasonably practicable and the activities associated with fuel reduction and maintenance are captured in the organisation's Standard Operating Procedures. We note that:

- The CFA seeks a minimum separation between solar banks/rows of 6 metres whereas a 12 metre gap between rows (centreline to centreline) is nominated between rows in the substituted plans. Reducing the spacing from that shown on the substituted plans may be allowed by

[87] During the hearing, it became apparent that the estimate of 12 people was not confined to workers on-site and instead six could be expected.

the CFA but may have other implications, such as with respect to pervious surfaces and permeability as indicated above.

- Although the CFA itemised installations, such as for static water supply (not less than 45,000 litres capacity), its position is that the Fire Management Plan should inform and tailor the specific requirements. Mr Kern agrees with this approach.
- The CFA states local volunteer fire service would be supported by headquarters with training. The applicant accepts a role for the operator of the solar energy facility to familiarise local fire brigade officers including on-site training.

245 Respondents have serious concerns about community safety and risks to fire fighters. A number of parties spoke of their personal experiences in fighting devastating St Patrick's Day fires and their concerns about the practical difficulties of fighting a fire involving a solar energy facility. Respondents are further concerned about the:

- Capacity of local volunteer brigades to fight a fire in a solar farm including to deal with the toxicity of fumes.
- Increased fire fuel loads associated with vegetation growing among the solar panels and/or with the proposed landscape buffer surrounding the entire site.
- Adequacy of proposed permit conditions with respect to water on-site, equipment and training.
- Lack of knowledge about the mechanisms to fight an electrical fire within the solar energy facility itself.

246 Respondents are concerned that the CFA's *Guidelines for Renewable Energy Installations* have not been tested, and that large solar energy facility projects present previously unknown risks and challenges. They question whether the CFA's *Guidelines for Renewable Energy Installations* go far enough to protect lives and properties and the role of internal controls to address a fire on the subject land.

247 Respondents believe the application does not demonstrate sound fire mitigation strategies. Having regard to policy that seeks to prioritise the protection of human life over all other considerations with respect to fire, this is an important issue in their submissions.

Findings

248 Two circumstances need to be considered. One is fire within the facility. The other is a fire around/travelling toward the facility. The latter is the predominant external threat to the site identified by the CFA, in the form of a grassland fire.

249 As we state in other parts of these reasons, in bushfire affected areas, clause 71.02-3 directs the decision-maker to prioritise the protection of human life over all other policy considerations. Mr Glossop makes this point in his

evidence when he states bushfire is the only 'threshold issue' whereas all other policy considerations must be balanced.[88]

250 Policy makes clear that bushfire risk and hazard must be assessed. Although the CFA has proposed permit conditions to address risk, there is no substantive risk and hazard assessment before us, nor a draft/proposed emergency management plan. For a facility of the size proposed, we consider this is a gap.

251 Mr Kern's instructions with respect to bushfire risk were confined to specific questions:[89]

> (a) Are there any guidelines published by the CFA that specifically relate to bushfire management in the context of solar farms?
>
> (b) Has there been any study which has looked at incidence of fire at solar farms?
>
> (c) Does the infrastructure associated with a solar farm create wind conditions that might accentuate any fire risk?
>
> (d) Is there any concern with the proposed planting of up to 7 rows of trees within the 20m landscape buffer of the species outlined in the letter included in your brief?
>
> (e) What assumptions have been made in keeping fuel levels within the site array at acceptable levels?

252 His evidence cites other factors that mitigate bushfire risk but does not, in our view, provide a risk assessment *per se*. He was not asked to do so in his instructions.

253 The proposal lacks details to explain how a fire coming into the solar energy facility, or a fire within the solar energy facility, will be able to be managed. The CFA guidelines are relevant, but we know that 45,000 litres is not enough (as accepted by the CFA at the hearing) and that risk assessments are required. We are aware of the consideration of bushfire and electrical fire management in the planning permit application.[90]

254 However, we have not been persuaded that the proponent has satisfactorily demonstrated that the relevant scheme policies have been addressed. We are not satisfied that deferring the whole assessment of bushfire risk to permit conditions is appropriate particularly where potential measures and conditions may impact upon the layout and design of the facility. Details such as the location of all-weather internal access roads to enable a fire truck to traverse all parts of the site may mean raised access roads on land that is located within the 1:100 AER event. This is relevant to how drainage and runoff are to be managed including the extent of impervious surfaces and surface barriers.

255 For a facility of some 588ha with up to 700,000 solar panels in a bushfire prone area (with experience of significant and damaging fires), we find this

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88 Statement of evidence by Mr J Glossop, May 2019, paragraph 20, page 6.

89 *Ibid*, at page 2.

90 Bookaar Solar Farm Planning Report for Planning Permit Application, by Tract, at page 57.

to be a deficiency in the material relied upon by the applicant. The potential for peat is another specific local factor in this regard that does not appear to have been considered.

256 We have not been provided with satisfactory responses relating to toxicity.

257 We are not persuaded differently by the Tribunal's decisions in *ESCO* and *Croke*. The latter focused on marrying-up landscaping and bushfire considerations. The *ESCO* decision accepted fire risk assessment and monitoring through permit conditions recommended by the CFA for a facility that, when compared with the proposal before us, is substantially smaller (245ha and 420,000 solar panels) and differently configured. Here, the site comprises almost 6 km². In the current case, we also agree that landscaping treatments can be married with fire access and clearances and we expect fuel loads can be managed within the subject land. It is further relevant to the influence the *ESCO* and *Croke* decisions should have are contextual and physical differences between those sites and the subject land, and on its face, the layout information in the application plans in those proceedings appears more detailed than the substituted plans in this proceeding.

258 We observe the draft Solar Guidelines do not address bushfire in the application requirements. A brief section on fire management cites the CFA's involvement and refers to fire in an operational context.[91] Perhaps this is to assume that the fire risk on any site can be managed. On one view, however, such an approach may 'downplay' the relevance of bushfire considerations in a primary decision about site suitability and risk assessment, as is required by State policy.

GLARE AND GLINT

Scheme policy and provisions

259 Clause 53.13-3 requires us to consider the effect of the proposal on the surrounding area in terms of, amongst other things, glint. This is part of the broader consideration of amenity impacts and land use compatibility when assessing land use and development proposals.[92]

Overview of parties' positions

260 Relying on Mr Scrivener's evidence, the applicant submits that the Tribunal should conclude there is no unreasonable impact of glint and glare in either the public or private domains. It submits that any residual effects would be further mitigated through the provision of existing and proposed landscape screening. It also relies on the Tribunal's findings in *ESCO*[93] and *Croke*.[94]

261 The expert evidence relies on and refers to a report submitted with the permit application, both prepared by Mr Scrivener. The analysis considers

91 Draft *Solar Energy Facilities Design and Development Guidelines* Department of Environment, Land, Water and Planning, 2018, sections 5.3.6 and 9.1.
92 Clause 13.
93 *ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219, [94]-[95].
94 *Croke v Moira SC* [2019] VCAT 112, [94]-[102].

a fixed panel position and a tracking system that optimises the panel angle throughout the day to maximise electricity generation. As noted, the applicant's position in the hearing is that a tracking system will be used. Mr Scrivener states that this does not change his conclusions.

262 Mr Scrivener's evidence assesses the glint and glare effects on ground-based receptors within 1 km where it was concluded that views of the reflecting solar panels may be possible. The assessment also considers the Darlington Road where it was also concluded that views of reflecting solar panels may be possible.

263 Mr Scrivener's evidence includes:

- Unmitigated, the solar reflections would last up to 20 minutes (on a clear sunny day). The assessment provides recommended mitigation options for the five dwellings where solar reflection is possible. Based on a site survey, it was determined that screening should be installed for three dwellings (dwellings E, I, K).[95] The remaining two dwellings (dwellings L, N) have sufficient screening with existing shelter belts to mitigate potential impacts.
- For both sets of receptors, where the solar panels are not visible, there will be no impact.
- Glint and glare effects are only possible when the weather is clear and there is sunshine.
- In the event a solar reflection is experienced from a solar panel, the light intensity will be similar to a solar reflection viewed from still water.
- Where solar reflection may be experienced by a receptor, the solar reflection and direct sunlight will be viewed simultaneously. Direct sunlight is significantly more intense than any solar reflection from a solar panel.

264 Viewpoints (Mt Leura, Camperdown Botanic Gardens and Mt Elephant) are not part of the expert evidence. This is explained on the basis that modelling showed that no solar reflection is geometrically possible at these locations considering the geographic relationship to the proposed solar energy facility.

265 The Council does not raise concerns about the potential for glint and glare.

266 Concerns and criticisms raised by respondents include:

- The assessment is a desktop exercise only.
- The analysis comments on cars travelling at speed but there are slower moving and higher trucks and vehicles that will have greater exposure than assumed in the evidence.
- The assessment does not fully consider longer range impacts.

[95] The dwellings are identified in the evidence.

- The assessment does not consider the rear of the panels.

267 Wannon Water refers to its recycled water storage within 3km of the proposed solar farm and questions the impact from glare on workers driving past a solar farm. Some farmers make the same point about working in nearby paddocks.

Findings

268 On the available material, the proposal will not cause unacceptable impacts with respect to glint and glare. The orientation of the panels, the proposed tracking system and materiality are all relevant in this regard.

269 In *Croke*, the Tribunal made the following findings:[96]

> Given the tracking nature of the solar panels, we are satisfied that this addresses to an acceptable degree concern about glint and glare as the panel is always facing towards the sun, so any reflection occurs back towards the sun.
>
> We also note that the panels are designed to be as efficient as possible by absorbing as much light as possible, not reflecting it. To further limit reflection, the panels are constructed of dark, light absorbing materials and covered with anti-reflective coating.
>
> The aluminium frames and mounting structures for the panels may have glint and glare impacts however this is limited to a small surface area and short duration before the surface is dulled by weathering.

270 Other Tribunal decisions[97] and the Shepparton Panel[98] accepted analyses that appear similar or the same as that for us. This includes accepting a 1 km threshold distance.

271 However we note, in *ESCO*, that the Tribunal referred to the size of the facility before it and required a report to be prepared addressing any potential glint and glare effects and any recommendations contained within that report to be depicted on plans for endorsement. Relevant to this conclusion was the size and extent of the proposal.

272 Even though proposed perimeter landscaping may mitigate impacts, with possible modifications to the layout based on the flexibility desired by the permit applicant, a revised glint and glare assessment would be appropriate. The applicant's acceptance of landscaping to be completed prior to the installation of panels (subject to seasonal planting considerations) would assist to manage glint and glare impacts from an early stage.

WILDLIFE AND LAKE BOOKAAR

Scheme policy and provisions

273 The subject land is not within an Environmental Significance Overlay. Lake Bookaar is located approximately 1.1 km to the east of the site and is

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96 *Croke v Moira SC* [2019] VCAT 112, [95], [97] and [98].
97 *ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219, [94]-[95].
98 *Panel Report for the Greater Shepparton Solar Energy Planning Permit Applications 2017-162, 2017-274, 2017-301 and 2017-344.*

within an ESO Schedule 1 Watercourses Waterbody and Wetland Protection Overlay. Lake Bookaar is part of a chain of wetlands and lakes that contribute to the Ramsar[99] wetlands system in south-west Victoria. The ESO refers to the environmental and ecological functions of the lakes system.

274 The scheme seeks to protect and enhance waterways, lakes and wetlands, including their environmental values.[100] It expects development to be sensitively designed and sited and, among a number of strategies, stormwater quality and quantity related impacts are minimised.[101]

275 Protection of Victoria's biodiverisity is a related policy.[102] It is policy to avoid impacts of land use and development on important areas of biodiversity. It is also policy to 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 Ramsar Convention. These themes are reflected in local policy.[103]

Overview of parties' positions

276 Respondents refer to their concern that the proposed development will impact on the wetlands and birdlife including waterbirds. They refer to:

- Sightings of brolgas in the vicinity of the subject land and a research project that is currently underway that records those sightings.[104]
- Potential impacts on fauna because of 2.4-2.5 metre high fencing around the proposed facility, the absence of wildlife corridors to facilitate fauna movement and the 'lake effect' with resultant injury or death.
- The need for an environmental assessment of flora and fauna.

277 In response, the applicant relies on Mr Kern's evidence that it is unlikely that the solar farm would have significant impacts on birds and other wildlife. His evidence is that there is little evidence that collisions occur on a regular basis at solar energy facilities elsewhere in the world or that there are other factors contribute to fauna mortality. Mr Kern's evidence is also that other birds and bats are unlikely to be affected as there is little habitat to be removed and there is no indication that migratory birds would be affected. He says that this issue should be monitored on the site over time mindful that there could be minor changes in microclimate. A simple monitoring program could detect negative impacts on birds and wildlife if they are occurring and

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99 Ramsar wetlands are sites that are recognised under the Convention on Wetlands of International Importance (Ramsar Convention) as being of international significance in terms of ecology, botany, zoology, limnology or hydrology.

100 Clause 12.03-1S.

101 Clause 19.03-3S.

102 Clause 12.01-1S.

103 Clause 21.03-1.

104 South West Broker Research Project, cited in Mrs Howley's submission at paragraph 230 and footnote 32.

generally assessing trends of fauna use. Mr Kern envisages a role for workers on site as well as independent monitoring.

278 Mr Kern's evidence is that the solar farm would not have significant impacts on the Ramsar site at Lake Bookaar to the east of the subject land and a referral to the Commonwealth under the *Environment Protection and Biodiversity Act 1999* is not required.

279 The Department agrees that no EPB referral is required.

280 In response to concerns that waterbirds could land on solar panels mistaking them for water and be injured or not be able to fly away again, Mr Kern states that there is very little evidence that these types of impacts actually occur. He says the only place this impact has been documented is in limited circumstances on solar farms in the Mojave Desert of southern California with little if any evidence it could occur in wetter environments. It should be noted that the research in southern California related to solar energy facilities in an extreme desert environment where very little water is present in the landscape, which is a significant contrast with the conditions of the Bookaar area and the Victorian Volcanic Plains where many significant lakes are present.

Findings

281 We understand the basis of the concerns identified. We accept brolgas are in this location based on the respondents' submissions and also evident from the documented significant fauna within 10 km of the study area.[105]

282 However, there is little evidence or information that would properly provide a basis for a permit to be refused because of impacts on wildlife corridors, brolgas, other birds, bats and other fauna.

283 Mr Kern's evidence is persuasive about the capacity of migratory and woodland birds to distinguish lakes from a man-made structures associated with a solar energy facility. We accept his evidence that bird strike with wind farms may pose a greater risk.

284 More research is clearly required, based on Mr Kern's evidence. Permit conditions requiring monitoring, including through an independent process, would have the potential to contribute to the body of knowledge and provide an avenue for ameliorative measures to be reviewed and implemented.

285 This conclusion is made on an assumption that water quality is not affected.

286 The proposed 2.4-2.5 metre high fence could impede wildlife movement but Dr Jempson indicates that some low gaps should be provided for drainage purposes. This may assist some wildlife movement and reptiles. The proposed landscaping would also have some habitat benefits.

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105 Eco Logical Due Diligence: 520 Meningoort Road, Bookaar, Victoria, by Ecology and Heritage Partners Pty Ltd April 2018, Figure 4.

VEGETATION REMOVAL

Scheme policy and provisions

287 As indicated above, protection of Victoria's biodiverisity is State policy.[106] It is policy to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.[107] It is policy to ensure decisions that involve, or will 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*:[108]

> 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.

288 These themes are reflected in local policy.[109]

289 Clause 52.17 sets out provisions relating to native vegetation removal. A permit is required to remove native vegetation. Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider the decision guidelines specified in the *Guidelines for the removal, destruction or lopping of native vegetation* as appropriate. Offset requirements apply through clause 52.17-5. A permit must specify the offset requirement and the timing to secure the offset.

Overview of submissions and evidence

290 The permit application seeks approval to remove a small area of native vegetation. This is associated with the construction of two culverts within area up to 24m². It will require the removal of the Native Common Spike-sedge.

291 Mr Kern also observes that River Red Gum locations are avoided but that these are planted and not remnant vegetation.

292 Mr Kern's evidence is that the assessment accompanying the permit application identified all native vegetation. If additional culverts are required, no further native vegetation removal will be necessary.

293 The Council's grounds of refusal refer to an unacceptable level of environmental impact, but do not expressly refer to the loss of native vegetation. Mr Milner considers vegetation removal could be avoided but also accepts that the amount of vegetation to be removed is "*infinitesimal*".

294 The Department says that it is unlikely to be a referral authority for native vegetation, mindful that the total extent of native vegetation removal is likely to be relatively minor. The Department's written response to the

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106 Clause 12.01-1S.
107 Clause 12.01-2S.
108 Department of Environment, Land, Water and Planning, 2017.
109 Clause 21.03-1.

permit application expresses concern about the approach adopted in the application that is to confirm the exact location and extent of vegetation removal required as part of the detailed design phase (post planning permit consent). Its position was that it did not support a planning permit being issued allowing removal of an unspecified extent of native vegetation.

295 In its submission at the hearing, the Department still refers to two uncertainties remaining regarding the extent of native vegetation removal. First, the extent of removal has been underestimated at 0.002ha. The Department refers to the estimated area equating to the footprint of the culverts rather than the construction footprint. Second, uncertainty as to whether native vegetation removal will occur to access the site, such as from road shoulders, site entry or roadworks.

Findings

296 The estimated extent of native vegetation removal is very small. There is no indication that vegetation of particular significance affected nor that there are problematic fauna outcomes associated with the removal of the Native Common Spike-sedge.

297 We accept the applicant's submission that the permit application falls under the Basic Assessment Pathway of the *Guidelines for the removal, destruction or lopping of native vegetation* and does not require an accompanying habitat hectare assessment.

298 We agree with the Department that an unspecified extent of removal does not accord with clause 52.17-15:

> If a permit is required to remove, destroy or lop native vegetation, the biodiversity impacts from the removal, destruction or lopping of native vegetation must be offset, in accordance with the Guidelines. The conditions on the permit for the removal, destruction or lopping of native vegetation must specify the offset requirement and the timing to secure the offset.

299 It appears likely that more vegetation would be removed to accommodate drainage works, as suggested in the hydrological evidence. This may not result in additional native vegetation removal. There may be other areas for removal, as suggested by the Department with respect to culvert construction. Notwithstanding the applicant's submission that all areas of existing native vegetation have been identified on the site, we have not been provided with a specific assessment of any vegetation impacts associated with, for example, roadworks along Blind Creek Road.

TOURISM AND TOURISM POTENTIAL

Scheme policy and provisions

300 State[110] and local policy[111] in the scheme recognise tourism is a significant and growing part of the Shire's economic base. Among identified features

[110] Clauses 17.04-1S and 17.04-1R.
[111] Clause 21.04-2.

and attractions are lakes, waterways and volcanic cones. Local policy identifies the Lakes and Craters region as part of the Victorian Volcanic Plain bioregion. Bullen Merri and Lake Gnotuk are both internationally recognised for their scientific, environmental and landscape significance. Policy encourages tourism in the region in a way that protects the resources upon which it is based.

301 The Regional Growth Plan refers to tourism as part of its strategic directions and in positioning the region for economic growth.[112] It emphasises the desire and need to attract more people into the area, including Camperdown. Underpinning this is protecting and preserving the landscape and environmental assets upon which tourism is based.

Overview of parties' positions

302 Submissions opposing the proposal on tourism-related grounds include:

- The size, scale and function of the proposal will do nothing to enhance tourism particularly if it sets a precedent for more such projects. That will undermine policies relating to the Lakes and Craters area and the role they play in tourism.
- The land is part of the Great Ocean Road tourism region. There is no interest by visitors to renewable energy attractions and the proposed facility will deter visitors. This is because it detracts from the environment, heritage and cultural values of this special place.
- There is no indication that solar energy facilities offer tourism benefits.

303 The applicant submits there is no evidence before the Tribunal that would support a conclusion that the presence of a solar energy facility would have a deleterious impact on tourism to this region. It refers to the Tribunal's observation during the hearing that the presence of solar energy facilities in many countries in Europe does not appear to have had an impact on the attractiveness of those countries as tourist destinations. The applicant submits that the proposal will become a component of the landscape setting, in the same way as wind farms, and provide another layer of interest within a very diverse landscape.

Findings

304 We understand that people have different views about the desirability, or otherwise, of these facilities in a noted tourism area. People may choose to avoid the area in knowledge of the solar energy facility if they have a particular aversion to it. However, we are not persuaded by the submissions that the proposed facility will demonstrably and negatively on tourism. There is no demonstrable basis upon which we could conclude for example, that there would be a significant economic impact.[113]

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112 As stated at page 2.
113 Section 60(1)(f) of the *Planning and Environment Act 1987*.

ROADS AND INTERSECTIONS

Scheme policy and provisions

305 We must consider whether the proposal will require traffic management measures pursuant to the decision guidelines in clauses 35.07 and 53.13. More broadly, clause 21.05 addresses infrastructure and transport.

Overview of parties' positions

306 The applicant relies on Mr Gnanakone's evidence in submitting the Tribunal should be satisfied that there are no traffic engineering reasons as to why the proposal should be rejected. We refer to the evidence below. VicRoads accepts the traffic evidence with respect to intersection works at Blind Creek Road and Darlington Road.[114]

307 Some local residents and farmers oppose the permit application because of:

- The impact of traffic, particularly during construction, in circumstances where Darlington Road is regularly in disrepair;
- Safety with respect to school buses routes and farm vehicles and equipment;
- The need for road upgrades;
- The narrow condition of Blind Creek Road.

308 The Council proposes permit conditions to address works required on Blind Creek Road and Meningoort Road. It seeks a traffic management plan and a road quality audit. The latter is to provide independent monitoring and assessment of roads in this location. Permit conditions are not agreed between the Council and applicant.

Findings

309 We accept the principle that the road network should be able to accommodate traffic, particularly the relatively low vehicle numbers once the construction is complete. Construction traffic will be significant.

310 Ultimately, the question is what improvements are required to ensure traffic can be accommodated safely on the existing road network and whether these are achievable.

311 The applicant agrees that it should undertake works as a consequence of the proposed development, but only to the extent reasonable, mindful that there are other uses of the road network. An example is B-double vehicles using Blind Creek Road from a composting facility.

312 The creation of site access off Meningoort Road should be able to be accommodated.

313 We give weight to VicRoads' agreement to the proposed intersection treatment at Darlington Road and Blind Creek Road, based on recommendations in the traffic evidence.

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[114] Letter from VicRoads to the Principal Register of the Tribunal, dated 20 June 2019.

314 Mindful of submissions about the condition of Darlington Road further north of Blind Creek Road, the applicant agrees to construction vehicles only entering Blind Creek Road from the south. It will accept a permit condition to this effect, and submits this is within the control of the permit applicant to ensure compliance. We accept that this should be the case. The same is the case with the applicant's agreement to restrict vehicles using school bus routes during times coinciding with bus use.

315 The capacity for roadworks on Blind Creek Road is questionable and is unresolved. This road narrows, as described by Mrs Wilson, with steep verges leading to drainage lines. This narrowing affects how vehicles, such as large truck, pass one another. Mr Gnankone confirms that the section of Blind Creek Road would not enable two trucks to pass, without one stopping and moving off the road in part. The traffic evidence is that a 4 metre wide seal is required on Blind Creek Road with 1-1.5 metre shoulders. While this is the design specified in the traffic evidence, there has been no assessment of the ability to achieve this profile and what works will be required, including drainage works. In cross-examination, Mr Gnankone was unable to inform the Tribunal whether the road can be constructed to the design he recommends.

316 Permit conditions addressing road conditions, including rectification works if required, should be able to address concerns about damage to infrastructure. We note the applicant accepts a permit condition limiting traffic during building and safety for school bus routes and children.

ECONOMIC CONSIDERATIONS

Scheme policy and provisions

317 Clauses 17.01-1S, 17.01-1R and 21.04 address economic development. Agriculture and tourism are identified in this context through local policy. Diversification is part of the thrust of State, regional and local policies.

318 Economic impacts are also relevant under section 60(1)(f) of the *Planning and Environment Act 1987*.

Evidence in relation to benefits

319 The applicant relies on expert evidence by Mr Noronha in relation to economic considerations, and specifically community benefit from the proposed project from an economic perspective. The analysis excludes the economic stimulus of the decommissioning phase.

320 Mr Noronha concludes the project delivers a strong community benefit for the defined study area with construction and operational benefits outweighing any agricultural impacts associated with the temporary use of the land for the solar facility. Table 7.1 of Mr. Noronha's evidence details the net local economic stimulus totalling $27.7 million in real terms. Mr Noronha considers any cumulative economic impacts arising from the construction of the proposed facility, along with other major projects in the

region, to be manageable. He also refers to environmental and community benefits using information provided by the permit applicant.

321 Respondents have criticised the evidence including:

- Mr Noronha identifies economic benefits but does not identify any negative or wider benefits/costs.
- The evidence is limited in its scope.
- The expert evidence deals with some relevant matters in assessing community benefit, however, it is not a complete assessment of the net community benefit of the proposal.
- The fact that few local jobs would be created on an ongoing basis, and there are questions about the contribution during construction, shows there may be potential short-term gains but not long-term benefits.

322 We accept that the proposal would have economic benefits, although for the reasons given below, the numerical components of the assessment are not fully accepted. This is because of factors such as:

- The evidence fairly observes the difficulty in calculating some of the impacts due to a range of influences.
- Some of the data is based on information provided by the permit applicant, which has not necessarily been verified independently.
- It is apparent from answers to questions we asked at the hearing that some of the assumptions used in the statement derive from submissions for planning permit applications for other solar energy projects, rather than any empirical data. In discussing construction phase economic benefits, the evidence is that generally in utility-scale solar farm project of this nature approximately 10% of total investment is said to be retained locally. We understand that this figure is taken from proposals for other solar projects and is not supported by data from the construction of those projects.
- Although we accept that jobs will be created in construction, the extent to which it can be assumed they are local or non-local workers is again a figure upon which we have no certainty.
- These types of considerations would, we expect, affect the outcome of the numerical assessment in Table 7.1.

Land values

323 Mr Noronha's evidence addresses land and property value impacts. He notes that land and property values are subject to a range of complex factors and relationships which makes it difficult to isolate one particular factor as causal to price movements. He refers to some research relating to the impacts of wind farms on property prices but says they should not be compared with solar farms given the intrinsically different nature of the developments and operations. He concludes that it is not possible to reliably advise the Tribunal on the impact on property and land values on

surrounding properties as a consequence of the proposed solar energy facility.

324 Some statements of grounds and submissions presented at the hearing refer to the permit application adversely affecting property values. Several farmers describe their land as their superannuation. Others refer to the impact of the proposed facility in terms of reducing its lifestyle and liveability benefits, particularly because of its size. In addition:

- Mrs Howley submits that the overall impact on property values for a region is hard to quantify but submits it is relevant in terms of net community benefit.
- Mrs Marburg expresses her view that property values will decline and that this is an impact on amenity.
- Mrs Howley refers to housing needs during construction. She suggests that this may affect property and rental values and may change the current trend for lifestyle retirees to join the local community because they come for amenity and community factors. These needs to be considered and balanced in the assessment.

325 The relevance of economic impacts in planning matters relates to the contended effects on the community, not individuals and their private financial interests.[115] The effects must be demonstrable,[116] and the effects must be 'significant', consistent with the wording in the *Planning and Environment Act 1987*. There is no valuation evidence or other evidence in support of the grounds advanced upon which the Tribunal could conclude that the alleged economic impacts are demonstrated or significant.

DECOMMISSIONING

326 The costs and responsibility for decommissioning, and restoration of the land to agriculture, are of particular concern to many respondent parties and those who have filed statements of grounds. Among the identified issues are:

- Whether decommissioning would actually occur, because there is no guarantee from the proponent and no decommissioning plan.
- What decommissioning should comprise.
- What financial requirements should be used to ensure decommissioning occurs.
- A proposed condition requiring a $5 million bond is insufficient. Together with other respondents such as Ms Brain, Ms Dean suggests a fund be established for the life of the project to ensure there is sufficient capacity to decommission the farm and ensure there is no environmental degradation.
- The hazardous nature of photovoltaic panels and issues about the disposal of panels.

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115 *Boydell Pty Ltd v Yarra CC & Ors* [1998] VCAT 564.
116 *Minawood Pty Ltd v Bayside CC* [2009] VCAT 440 at paragraph 39.

327 The Council identifies its concerns as well. It seeks surety that in the event a permit issues, the subject land will be decommissioned, remediated, and returned to agricultural production. In its submission assurances made by the applicant require bonds or other measures to entice compliance.

328 The applicant accepts its responsibility for decommissioning, which can be addressed through permit conditions. It opposes a bond and a section 173 agreement as part of permit conditions. Mr Cicero submits a bond cannot be imposed by way of a permit condition unless there was a specific requirement or at least the policy basis under the scheme, which there is not.

329 We consider that the ability to return the subject land to agricultural usage is important, without degraded quality and capability. In part, this is why project details with respect to re-grading, for example, are relevant for future re-use the land. Providing a plan up-front assists to ensure that construction processes take into account the longer term future of the land as well as potentially being relevant to any agricultural use that was to occur, such as sheep grazing as referred to by the applicant. We are influenced in this view by the fact that the proposal involves 588ha of productive agricultural land.

330 We agree that there is a legal difficulty in requiring a bond by a permit condition. Our finding is consistent with *ESCO*.[117] This is another reason why a decommissioning and rehabilitation plan as part of the application, that can be referred to in a permit, can provide greater comfort that the potential for agricultural use in the long term is not undermined. Securing this by a section 173 agreement may be appropriate.

OTHER GROUNDS

331 Other matters in statements of grounds are not reasons to refuse a permit and some are properly addressed by permit conditions.

Aboriginal cultural heritage

332 Mrs Mahony and Mrs Howley are among a number of parties questioning why there is not greater consideration of Aboriginal cultural heritage. They refer to the extensive Aboriginal history and artefacts found close by in the Bookaar area among other material that, in their submissions, provides evidence of Aboriginal habitation and the potential cultural value of the entire Meningoort property. They submit consideration should be given for the potential unknown areas of Aboriginal history.

333 Aboriginal cultural heritage is an important consideration in policy[118] and other legislation.[119] It should inform the layout of a development proposal. The plans were amended in the Council process so that the layout of the proposed facility excludes an identified area of sensitivity to the north-east of the site. There are not recorded artefacts, although we note Mrs Mahony's submission that she has endeavoured to have items recorded.

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117 *ESCO Pacific Pty Ltd v Wangaratta RCC* [2019] VCAT 219, [135].
118 Clause 15.03-2S.
119 *Aboriginal Heritage Act 2006* and Aboriginal Heritage Regulations 2018.

334 Based on the currently mapped areas of Aboriginal cultural heritage sensitivity, there is no legislative requirement for a Cultural Heritage Management Plan, even though such a plan could be prepared voluntarily by a proponent.

335 Obligations apply under the *Aboriginal Heritage Act 2006* and Aboriginal Heritage Regulations 2018 where any materials or artefacts are found during construction.

Electromagnetics

336 Clause 53.13-3 requires us to consider the effect of the proposal on the surrounding area in terms of, amongst other things, electromagnetic interference.

337 Electrical equipment produces electromagnetic fields. This electromagnetic radiation produced from transformers and inverters is reduced through performance standards that apply to standard components. The draft Solar Guidelines say that the Australian Radiation Protection and Nuclear Safety Agency (**ARPANSA**) advises that the strength of these fields will decrease with distance from the source and become indistinguishable from background radiation within 50 metres for high-voltage power lines and within 5 to 10 metres of substations. The design and layout of the facility should account for these factors.

338 Mrs Howley raises a different issue with respect to impacts on the ground conditions on adjacent properties. That is in terms of impact on livestock, particularly cattle, due to exposure to electrical currents through the ground. Reference is made to news reports in this regard.[120] There are additional submissions about electrolysis in groundwater.

339 We understand that this issue has been raised in other proceedings.[121] However, we have no information to understand the different impacts, should they exist, between a solar facility of, say, 40MW versus the intended capacity of the proposed solar facility at 200MW. We are unable to make further findings on this matter, save to rely upon the ARPANSA advice.

Air-quality and microclimate

340 Questions are asked by some respondents about the possible effects of a large solar power plant on the air and soil microclimate. For example, Mrs Howley's submission refers to several studies that support her proposition that solar energy facilities may affect temperature, rainfall distribution and wind flow over the land. This results in changes to carbon storage and the release of greenhouse gases as well as soil organisms.

341 As we have recorded earlier, Mr Kern indicated that there may be some alteration of the microclimate in terms of wind deflection. This was in the content of bushfire considerations. We can make no further findings.

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120 Mrs Howley's submission, paragraph 236 at page 55 of 128.

121 *Croke v Moira SC* [2019] VCAT 112, [103].

Noise

342 Clause 13.05 of the scheme addresses noise abatement. Clause 53.13-3 requires us to consider the effect of the proposal on the surrounding area in terms of, amongst other things, noise.

343 We have not been persuaded that there are specific impacts in terms of noise that will affect amenity or neighbours. The proposal is well separated from dwellings in terms of the potential for any noise intrusions.

Chemicals

344 Ms Dean refers to procedures if the solar panels (toxic material) are damaged (such as in a storm or hail event) and Mrs Mahony refers to the lack of mention in the permit application about the type or amount of chemicals needed on-site, such as the limit weeds. Concerns relate to downstream/runoff impacts as well as to future rehabilitation of the land.

345 We have no information in relation to this matter but consider it can be addressed by permit conditions through environmental management plans as proposed in the Council's draft conditions.

Number of objections

346 Mrs Howley refers to the number of objectors to the permit application. She cites section 84(2)(jb) of the *Planning and Environment Act 1987* in identifying this as a relevant matter.

347 The *Planning and Environment Amendment (Recognising Objectors) Act 2015* was made to require responsible authorities and the Tribunal to consider the number of objectors to a permit application in assessing whether a proposed use or development may have a significant social effect. Planning Advisory Note 63 explains the aim is indicate that:

- The number of objectors may indicate a significant social effect of a proposal; and
- If so, the responsible authority and VCAT must have regard to that fact in considering whether the use or development may have that effect.

348 The Advisory Notes refers to Tribunal decisions in *Minawood*[122] and *Rutherford*[123] in explaining what a social effect is and how it is determined. Further, the fact that a large number of people have objected will not, by itself, establish that a proposal has a significant social effect.

349 We do not consider that the objections and concerns in the current proceeding demonstrate a significant social effect nor mean that the location is, *ipso facto*, inappropriate. We have explained the task before us and what we must consider.

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122 *Minawood Pty Ltd v Bayside City Council* (Red Dot) [2009] VCAT 440 [35].
123 *Rutherford & Ors v Hume City Council* (Red Dot) [2014] VCAT 786 [50]–[55].

Consultation and social license

350 Objectors referred to their concerns about the lack or inadequate consultation with the community, a submission that the applicant strongly challenges. Respondents say the applicant does not have the social license to proceed and the process has been divisive in this small community. More broadly, they submit the proponent has failed to properly address and assess the project's social and community impacts.

351 We acknowledge concerns raised by several respondents about the personal toll of this proposal and how the process has affected the local community. Reference is made to stress levels, fractured communities, and breakdowns in neighbourly relationships. There is not, however, a basis upon which we can give influential weight to these social effects that meets the high test that applies under section 60(1) of the *Planning and Environment Act 1987*.

352 We do not consider that there have been inadequate consultation opportunities but, even if that was the case, our task is review the permit application afresh. All parties have had an opportunity to present their submissions and all submissions, and statements of grounds, have been considered in reaching our decision.

Community fund

353 The permit applicant agrees to an annual contribution of $20,000 to the local community. The ability to include such a condition on a permit was discussed at the hearing, however, the applicant emphasises that it does not resile from this commitment. Respondents do not consider this to be a significant monetary contribution for a project that is estimated to cost some $280m.

354 We accept the applicant's public statement but cannot take this further. This is because we accept the applicant's submission that the condition cannot lawfully be applied on a permit in this case.

Heat island effect

355 The heat island effect is cited in several statements of grounds but was not the subject of extensive submissions at the hearing. There is no evidence or information provided to explain the concerns more fully or underpin the submissions.

356 The draft Solar Guidelines state that a heat island occurs where ambient temperatures around developments are higher than those of surrounding vegetated areas, particularly at night. This is similar to the urban heat island effect. However, while the heat island effect is known to exist in large urban areas, there is little evidence of impacts on other land uses such as orchards due to heat dispersal from solar energy facilities.

357 Clause 15.02-1S includes a strategy to reduce the urban heat island effect by greening urban areas, buildings, transport corridors and open spaces with vegetation. There is no policy relating to 'non-urban' heat island effects.

358 Some comments about this effect are made in the draft Solar Guidelines and other Tribunal decisions.[124] There may be different impacts arising from a facility of the scale proposed here, compared with the other cases involving smaller facilities. However, there is no information or evidence before us to enable a conclusion to be reached.

Increased vermin

359 Mr Hickey expresses concern about increased vermin that may result from the proposal. We note this submission and consider measures as part of a pest and weed management plan would be appropriate.

Lack of regulations relating to the installation and operation

360 Mr A Smith refers to the process of installing and then operating the proposed facility. He emphasises the lack of regulation and guidelines that may impact who can construct the proposed solar energy facility.

361 This regulatory matter is beyond the scope of our discretion and consideration.

Precedent and cumulative effects

362 The scheme asks the decision-maker to consider cumulative effects.[125] There are no other solar energy projects either existing or proposed in the near or wider area requiring an assessment of cumulative effects. We have referred to Mr Noronha's evidence with respect to to cumulative economic impacts associated with a broader range of energy facilities.

363 Respondents contend that the loss of valuable farm land for the proposed solar energy facility will set a precedent that could lead to the uncontrolled loss of additional large tracts of valuable western district land for similar purposes. We do not agree. Each application must be assessed on its own facts and circumstances. Every development is different. Every site is different. Planning policies and controls may also differ from place to place and time to time.

PERMIT CONDITIONS

364 In accordance with standard Tribunal practice, draft permit conditions have been discussed through the hearing and have been the subject of detailed submissions at the end of the hearing.

365 Several respondents highlight the number of proposed conditions, which they say demonstrates there may be something inherently wrong with the location of the proposed facility, that there is a lack of planning guidance regarding solar energy facilities, and/or that impacts have not been satisfactorily resolved. As a matter of principle, we do not agree. Applications for large

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124 Draft *Solar Energy Facilities Design and Development Guidelines* Department of Environment, Land, Water and Planning, 2018, at section 7.2.3 on page 28 and *Croke v Moira SC* [2019] VCAT 112, [105]-[106].

125 Clause 19.01-2R. The draft Solar Guidelines also refer to this consideration, section 4.8 at page 15.

facilities where environmental management is an important matter can be expected to include multiple conditions. Such conditions provide processes for monitoring and review. They may be the subject of enforcement if conditions are not complied with or if issues arise.

366 Local property owners have questioned their ongoing involvement if a permit issues. This is in the context of information flow and access to material being submitted to the Council, such as plans for endorsement. The Council can elect to consult but the Tribunal cannot include conditions on a permit that gives rights to the community. Concepts such as community committees and processes for complaints handling are not unusual for large projects. The applicant agrees to a consultation group being established, although the role of such a group would need to be defined.

NET COMMUNITY BENEFIT

367 Clause 71.02-3 requires the decision-maker to integrate the range of policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.

368 Any proposal brings change. Impacts may be positive, neutral or negative. We do not have to find that there are no impacts.

369 The potential contribution to renewable energy is a positive community benefit and we expect there would be economic benefits as well.

370 There is strategic support for a solar energy facility on the subject land, notwithstanding that productive agricultural land (even with its capacity to be improved for more intense use such as dairying) will be used for another purpose of the life the solar energy facility. We give significant weight to this finding. However, we are very mindful of the sizeable area of productive land that would be removed from production for the life of the solar energy facility. This is a factor in the balancing exercise required.

371 We have sufficient information to assess and conclude that the visual impacts associated with the proposal are acceptable, as are potential off-site amenity impacts, including with respect to glint and glare, and the loss of native vegetation.

372 If granting a permit for a facility of some 588ha, we need to be satisfied that environmental risks have been identified and assessed to a level that gives us confidence that an acceptable outcome is or can be achieved. We have not been persuaded that the effects of the proposal on the local community and environment have been minimised, particularly with respect to hydrology/drainage and bushfire risk.[126]

373 Assessments relating to bushfire, drainage/hydrology and runoff need to inform a design. The applicant contends that drainage and stormwater runoff can be engineered and are not threshold issues. In some instances

[126] Clause 19.01-2S.

that may be the case. That is not, however, the conclusion we have come to with respect to the subject land and proposal. We are not persuaded that the permit application has adequately addressed the environmental risks associated with the subject land and surrounds. Nor has the site layout been informed about the extent of risk and modelled assessments that give us confidence that the proposal adverse off-site impacts can be managed without other consequences.

374 The following comment Mr Milner makes is apt to our conclusion:[127]

> On one view the approval sought is to establish the principle of the use, a generalised impression of the development and the land required and an expectation that detail will be provided via endorsed plans or conditions.

375 We appreciate that some flexibility is sought by proponents of substantial infrastructure projects to accommodate new technology and finer siting considerations through detailed design. An example might be 'micro-siting' of wind turbines in a major wind farm project.

376 In areas where we find the application material and evidence is lacking, we are not persuaded that the deficiencies should be deferred to be resolved through permit conditions. We cannot conclude, at this time, that the permit application is acceptable and a net community benefit is achieved. For a small solar energy facility in another location, that approach might be acceptable. It is not for a major infrastructure facility of the substantial scale and size proposed on the subject land in this permit application. Our concerns are not simply resolved by citing the Rina plan/s as a permit condition.

377 It follows that in relation to some of the identified determinative issues, in particular issues relating to hydrology and bushfire management, and an indicative site layout, we consider that we do not have adequate information upon which to make formal findings. This means we are unable to complete its integrated assessment of the proposal as a whole, in order to determine whether the proposal overall produces an acceptable planning outcome based on principles of net community benefit and sustainable development.

378 We have expressed a number of concerns about the lack of a more detailed plan for the proposal within the substituted plans, or even an indicative layout plan together with information as to the circumstances where the layout could be varied from that plan. Importantly, an assessment of the attributes of the land (such as its potential for flooding, drainage or runoff) and an assessment of risks and impacts (such as bushfire risk) should inform the design and layout of the proposed solar energy facility rather than having those matters addressed as an afterthought or deferred to permit conditions.

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[127] Statement of evidence by Mr R Milner, May 2019, paragraph 112 at page 38.

CONCLUSION

379 We have considered whether we would provide an interim decision outlining our concerns, and then give the applicant the opportunity to address those concerns within the existing Tribunal process. Ultimately we consider such an approach would be inappropriate in the circumstances of this proceeding.

380 As we have indicated, there is strong State planning policy support for renewable energy facilities, that might be said to bolster the case for such an approach – particularly given our finding that there is strategic support for a solar energy facility on the subject land, notwithstanding that productive agricultural land will be lost.

381 But planning policy support for a renewable energy facility is not unconstrained, and does not trump other important considerations. There is nothing in the scheme to support such a position. Support for renewable energy proposals in appropriate locations does not override the need for each proposal to still respond to the relevant application requirements and decision guidelines in the scheme.

382 Having regard to the issues to be resolved, the preparation of further plans and assessments that would be required and the desirability of having those plans and reports properly considered by the Council, Department, CFA and other parties, the process that would need to be undertaken would be tantamount to a fresh application. It is also possible that other parts of the proposal may change as a consequence of amended plans that are informed by the further hydrological or bushfire management assessments. It is therefore better that the process is undertaken as a fresh application, rather than through a Tribunal managed process beyond the Tribunal's normal decision-making function.

383 The deficiencies in the proposal therefore lead us to a decision that the application, as currently framed, should be refused. Our decision may nonetheless assist in the preparation and consideration of any fresh application.

384 As noted earlier in this decision, since the hearing, the Department has released the revised Solar Guidelines. These Guidelines have not yet been implemented and have not influenced our decision. They may nonetheless be relevant to any future application.

Mark Dwyer
Deputy President

Margaret Baird
Senior Member

Appendix B: Clause 53.13-2 Application Requirements

Application Requirement under Clause 53.13	Compliance
A site and context analysis, including: ▪ *A site plan, photographs or other techniques to accurately describe the site and the surrounding area.* ▪ *A location plan showing the full site area, local electricity grid, access roads to the site and direction and distance to nearby accommodation, hospital or education centre.*	Refer to Section 2 of this Planning Report (Site & Surrounds). Additional site and context analyses have been undertaken within each of the supporting technical reports. A site plan and location plan are included as part of this application.
A design response, including: ▪ *Detailed plans of the proposed development including, the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas.*	A plan showing the layout of the Proposal and all associated infrastructure is included in the '*Site Plan*', and is to be read in conjunction with the description included in Section 3.1 of this Planning Report ('Key Elements of the Proposal'). This provides information in relation to the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas.
▪ *Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points.*	Refer to the Landscape & Visual Impact Statement, prepared by Jacobs.
▪ *The extent of vegetation removal and a rehabilitation plan for the site.*	Refer to the Biodiversity Assessment prepared by Ecology and Heritage Partners. Noting that the majority of the 588 ha Site does not contain native vegetation, and the two patches of native vegetation identified at the Site have been strategically avoided by the design of the Proposal.
▪ *Written report and assessment, including:* *An explanation of how the proposed design derives from and responds to the site analysis*.	Refer to Section 3.6 (Design) of this Planning Report for a discussion on how the Proposal responds to the site analysis.

▪ *A description of the proposal, including the types of process to be utilised, materials to be stored and the treatment of waste.*	Refer to Section 3 of this Planning Report (The Proposal). For waste refer to the Amenity Report that accompanies this Planning Report.
▪ *Whether a Works Approval or Licence is required from the Environment Protection Authority.*	A Works Approval or Licence is not required from the Environment Protection Authority.
▪ *The potential amenity impacts such as noise, glint, light spill, emissions to air, land or water, vibration, smell and electromagnetic interference.*	Refer to the Amenity Report that accompanies this Planning Report.
▪ *The effect of traffic to be generated on roads.*	Refer to the Transport Impact Assessment, prepared by Ratio that accompanies this Planning Report.
▪ *The impact upon Aboriginal or non-Aboriginal cultural heritage.*	Refer to the Supplementary Cultural Heritage Study prepared by Ecology and Heritage Partners that accompanies this Planning Report.
▪ *The impact of the proposal on any species listed under the Flora and Fauna Guarantee Act 1988 or Environment Protection and Biodiversity Conservation Act 1999.*	Refer to the Biodiversity Assessment prepared by Ecology and Heritage Partners that accompanies this Planning Report.
▪ *A statement of why the site is suitable for a renewable energy facility including, a calculation of the greenhouse benefits.*	Refer to Section 4 of this report for a detailed discussion of why the site is suitable for use as a renewable energy facility. As detailed in Section 1, the solar farm will generate approximately 460 GWh of clean electricity annually over a 28 year operational lifespan, which would offset approximately 519,000 tonnes of CO_2 annually.
▪ *An environmental management plan including, a construction management plan, any rehabilitation and monitoring.*	Refer to the Preliminary Environmental Management Plan (PEMP) included as part of the application. This PEMP will be used to prepare detailed stage specific Environmental Management Plans (EMPs) as the Proposal moves through the various stages of development.

Appendix C: Description of the Key Components of the Proposal

Solar panels

The Proposal will utilise approximately 641,000 individual PV panels. The dimensions of each panel are approximately 2 metres by 1 metre (see Site Plan, Appendix F). Although all solar panels share a characteristic look, they differ in output (measured in Watts). The panels utilised in the design for the Proposal are 440Wp panels and will be a dark blue to black colour (see the 'Solar Photovoltaic Glint and Glare Study', appended to the 'Amenity Report').

Single Axis tracking system

The solar panels will be fitted to a single-axis tracking system made up of individual tracking units collectively forming a 'tracking system'. The tracking system allows the PV panels to track the sun as it moves from east to west throughout the day. The tracking system is installed in rows orientated in a north south direction. The tracking system tracks the panels from 60 degrees towards the east in the morning, to face straight upwards at midday (0 degrees) and finally to face 60 degrees towards the west in the afternoon. The tracking system supports the panels to a maximum height of 4 metres when tilted at a maximum angle of 60 degrees past horizontal. Note, for the majority of the day, as explained above, the PV panels will be below the maximum tilt height of 4 metres.

The tracking system will be installed on piles which would be mechanically driven into the ground. Piles for the Proposal will be spaced 8 metres apart depending on ground conditions.

To optimise the Site layout for energy production, the spacing between each of the rows of trackers, when measured pile to pile, will be a combination of 12.75 metres (south of the 220kV transmission line) and 13 metres (north of the 220kV transmission line), see the 'Site Plan'. CFA guidance requires minimum spacing between rows of 6 metres for emergency access (see the Bushfire Risk Assessment and Mitigation Plan).

Figure 1 below provides an elevation plan of the tracking system proposed for the Site and demonstrates the maximum height of a panel (4 metres) at maximum tilt (60 degrees past horizontal). A scaled plan is provided in Appendix F of the Site Plan.

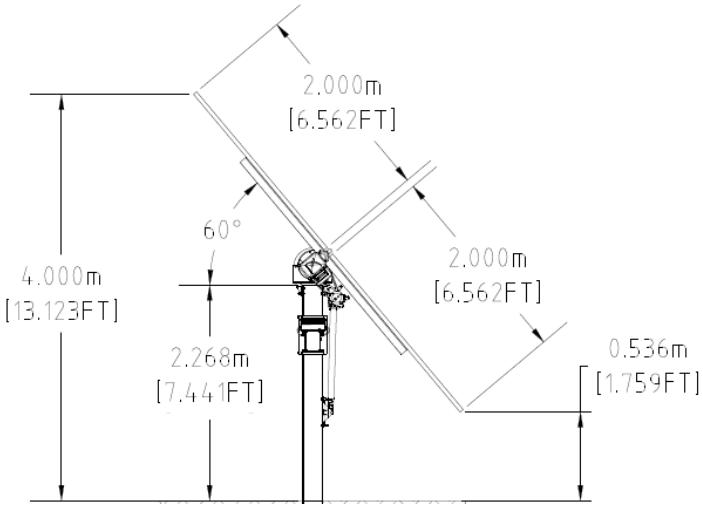

Figure 1: Tracking system showing elevation at maximum tilt

Inverters

PV panels are wired together and connected to 2.75 MW inverters positioned in pairs and housed in containers (measuring approximately 12.2 metres (l) x 2.4 metres (w) x 3.0 metres) known as inverter stations. The Proposal has 41 inverter stations located throughout the Array Areas (see the 'Site Plan'). PV panels produce Direct Current (DC) electricity which is converted to Alternating Current (AC) by inverters before it is exported to the electricity network via the substation. Each inverter includes:

- A 33 kV transformer;
- Circuit breakers; and
- Communication equipment.

Inverter stations would be transported to the Site readymade, and either attached to steel or concrete pilings, or installed directly on an area of hardstand, depending on ground conditions. In response to the Flood Assessment, inverter stations 1-2, 5-6, 9, 14, 16, 21-37 will be raised on piles to ensure clearance of at least 300 mm above the modelled 1 in 100 year flood. To satisfy this requirement, the maximum height of an inverter on piled foundations would be approximately 3.80 metres above ground level ('Site Plan, Appendix H'). All other inverter stations would have a total elevation of approximately 3.0 metres ('Site Plan, Appendix G'). Each inverter station will be located within a non-vegetated area of crushed rock measuring 26 metres x 22 metres.

Inverter stations 40 and 41, in the south west corner of the Site, are closest to the Site boundary at a distance of approximately 171 metres. Figure 2 illustrates an inverter station.

Figure 2: Inverter station containing two inverters (image courtesy of SMA)

The inverters would be connected to the Substation via 33 kV cables installed underground along the center of the Site.

Substation Area

The Substation provides the point of connection to the existing 220 kV transmission line that traverses the Site (see the 'Site Plan', and Site Plan Appendices A and B). The substation would be located on a graded surface within the Substation Area (1.76 ha). It has been located to avoid the 1 in 100 year flood.

The substation would contain the following components:

- Two overhead High Voltage cables and poles connecting the Substation to the existing 220 kV transmission line;
- Two (2) 220 kV transformers;
- High Voltage circuit breakers, switch gear, capacitor bank and static var generator;
- Metering equipment;
- Control room;
- Substation Operations and Maintenance Building;
- 33kV Switch Room;

- Parking space for five vehicles;
- An APZ (10 metres wide); and
- 2.5 metre high chain mesh security fencing.

Component heights of the substation (with the exception of the connection lines and poles) do not exceed 7 m (see 'Site Plan, Appendix B'), and will look like typical substation components as described in the 'Landscape and Visual Impact Statement'.

The design specifications of the Substation are subject to a separate connection agreement process with AEMO.

Battery Area

The Battery Area will be situated on a graded surface (approximately 0.91 ha) adjacent to the Substation in a location that avoids the 1 in 100 year flood (see Site Plan, Appendix A). The battery will be connected to both the inverter stations in the Array Areas and the substation through underground cables. The Battery Area will include the following:

- 88 battery units, located in pairs, with a unit capacity of 2.5 MWh. Each unit contains an inverter with a power generation capacity of 1.2 MW. Each unit measures approximately 7.1 metres (l) by 2.5 metres (h) x 1.6 metres (w);
- 44 Transformers each approximately 2.5 metre high and located adjacent to each pair of battery units;
- Underground cables connecting the Battery Area to the Substation and to the inverter stations; and
- The Battery Area will consist of a non-combustible mulch or mineral earth and is also protected by a 10 metre wide APZ to reduce fire risk.

Battery units would be transported to Site readymade and either attached to steel or concrete pilings, or located on a hardstand, depending on ground conditions. Battery units would be coated in a matt white or beige colour, although they are unlikely to be visible from private or public viewpoints outside the Site (see Landscape Impact Statement).

The combined storage capacity of the battery would be 220 MWh.

Operations Buildings Area

The Operations Buildings will be located on a graded area of approximately 0.96 ha (see 'Site Plan, Appendix C'). The Operations Buildings Area will include the following:

- A Site office building;

- Three storage buildings/sheds;
- A Water storage tank;
- A septic tank;
- A 20 metre APZ;
- A maintenance building / workshop; and
- Car parking for 12 vehicles.

Onsite buildings will comply with relevant Australian building standards and regulations and will be equipped with fire extinguishers. They will be clad in standard materials such as corrugated iron and will be finished in a palette of matt greens in order to blend into the local environment as far as possible. They will provide facilities for six onsite workers plus occasional visitors. Potable water for the support buildings will be supplied to the Site by commercial contractors and stored in the onsite water tank ('Site Plan, Appendix C').

Cables and cable trenching

All cable trenches and cables will be designed to site conditions in accordance with relevant Australian standards. Cable trenches will likely contain:

- Below ground warning tapes;
- Below ground Polymeric cover strips;
- Electrical cables to export power;
- Electrical supply cables where necessary;
- Earthing cable;
- Communications and offsite control links; and
- Above ground warning signs.

Where possible, trenches will be located alongside internal tracks to minimise ground disturbance. Figure 3 below illustrates a typical cable trench.

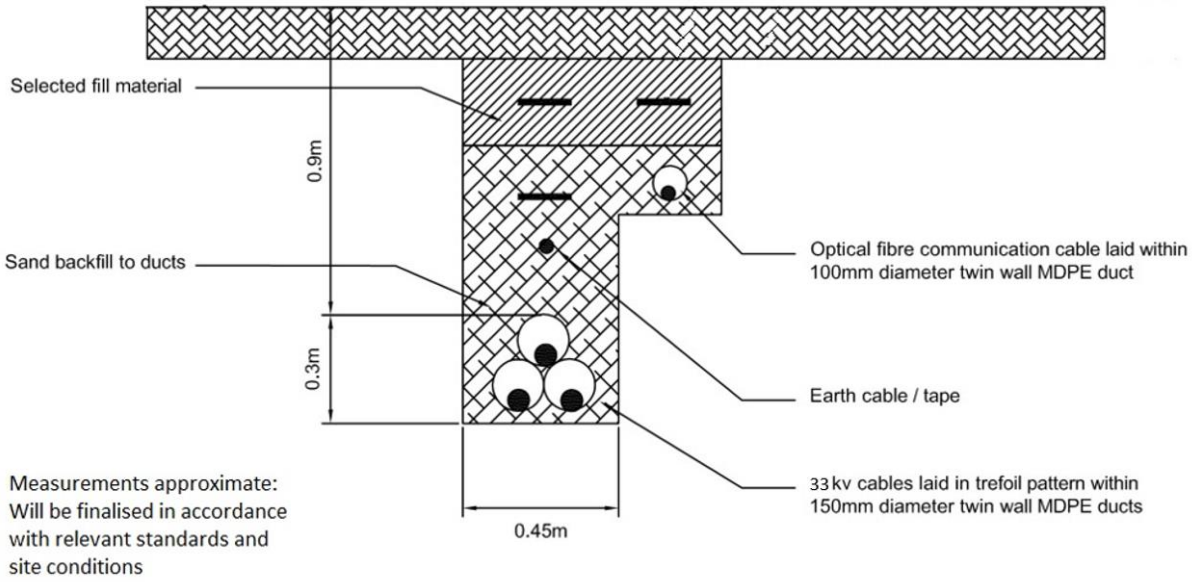

Figure 3: Typical 33kV cable trench

As noted on the 'Site Plan', cables will run under Meningoort Road in one location, as well as under the 'east west' drain and the 'north south' drain in one location each. Where cables are required to be installed under the drains, a horizontal bore will be used to ensure there is no disturbance to the integrity of the drains. The cable trench under Meningoort Road will be constructed and filled as part of the proposed road improvements.

Site Access

The Proposal will be accessed directly from Meningoort Rd (north) via the Darlington Camperdown Road through four (4) gated access points. Access points are numbered and illustrated on the Site Plan and described in more detail in the Traffic Impact Assessment. The main site access points will support all construction, operations and decommissioning traffic associated with the Proposal.

As part of access arrangements, improvements are proposed to both Meningoort Road and the intersection of Meningoort Road and Darlington-Camperdown Road, including:

- Upgrade of Meningoort Road (north) between Darlington-Camperdown Road and the western boundary of the Site to a typical 7.0 metre wide carriageway;
- Construction of a channelised left-turn lane from Darlington-Camperdown Road into Meningoort Road; and
- Sealing the first 30m section of Meningoort Road to facilitate turning movements of heavy vehicles into and out of Meningoort Road.

The improvements would follow the existing road contours as far as possible and include drainage to ensure that there are no impacts associated with flooding (as described in the 'Flood Assessment' and 'Traffic Impact Assessment'). Plans of the improvements are provided in the 'Traffic Impact Assessment'.

In addition to the main site access points, there will be a further four gated emergency access points along the western perimeter of the Site ('Site Plan'). These emergency access points would be used in combination with the main access points to ensure that all parts of the Proposal can be accessed in an Emergency. Emergency access points would only be used for emergency access and not the day to day operational activities of the Proposal.

A dedicated 100,000 litre water tank will be located at each access point (a total of eight water tanks) for firefighting built to CFA standards. The tanks will be constructed to a maximum height of 3.6 metres. Signs at each access point will include information on where to access water within the Proposal, this is in accordance with CFA requirements.

There will be a closed-circuit television (CCTV) security system to monitor access to the Site adjacent to access points and adjacent to key infrastructure.

Internal Track Network

Internal tracks will be all-weather and constructed of compacted gravel to an approximate depth of between 150 to 300 mm, depending on soil conditions. The tracks will be designed to be level with the existing topography of the Site to ensure that they do no create impendences to water flows during flood events (see the 'Flood Assessment'). The internal tracks will be 4 metres wide with regular wider stretches (6 m x 20 m) for passing (every 600 metres). The internal track network includes a perimeter track in line with CFA requirements.

The internal track network has been designed to provide multiple access routes to all parts of the Site and to divide the Proposal into a number of separate compartments to reduce fire risk (see the 'Bushfire Risk Assessment and Mitigation Plan'). In addition to this, all internal tracks are located within a 10 metre wide vegetation free APZ to further reduce fire risk at the Site.

Three culverts will be constructed where internal tracks cross drainage lines in the southern part of the Site. The culverts have been sized as part of the Flood Assessment and are marked on the Site Plan.

In addition to this, prefabricated bridges will be installed where the perimeter access track crosses the 'east-west' drain in two locations (see Site Plan). The bridges have been sized and selected to ensure that the native vegetation recorded in the drain will be avoided (see Biodiversity Assessment). The bridges are approximately 4 m wide and 12 m long and will span comfortably over the width of the drain (3.4 m and 3.6 m wide). The bridges would arrive prefabricated in shipping containers and be installed over the drain with the approaches of the bridges sitting on prefabricated flat concrete slabs placed on Geotech

fabric on the ground on either side of the drain. The prefabricated design avoids the need for subsurface foundations.

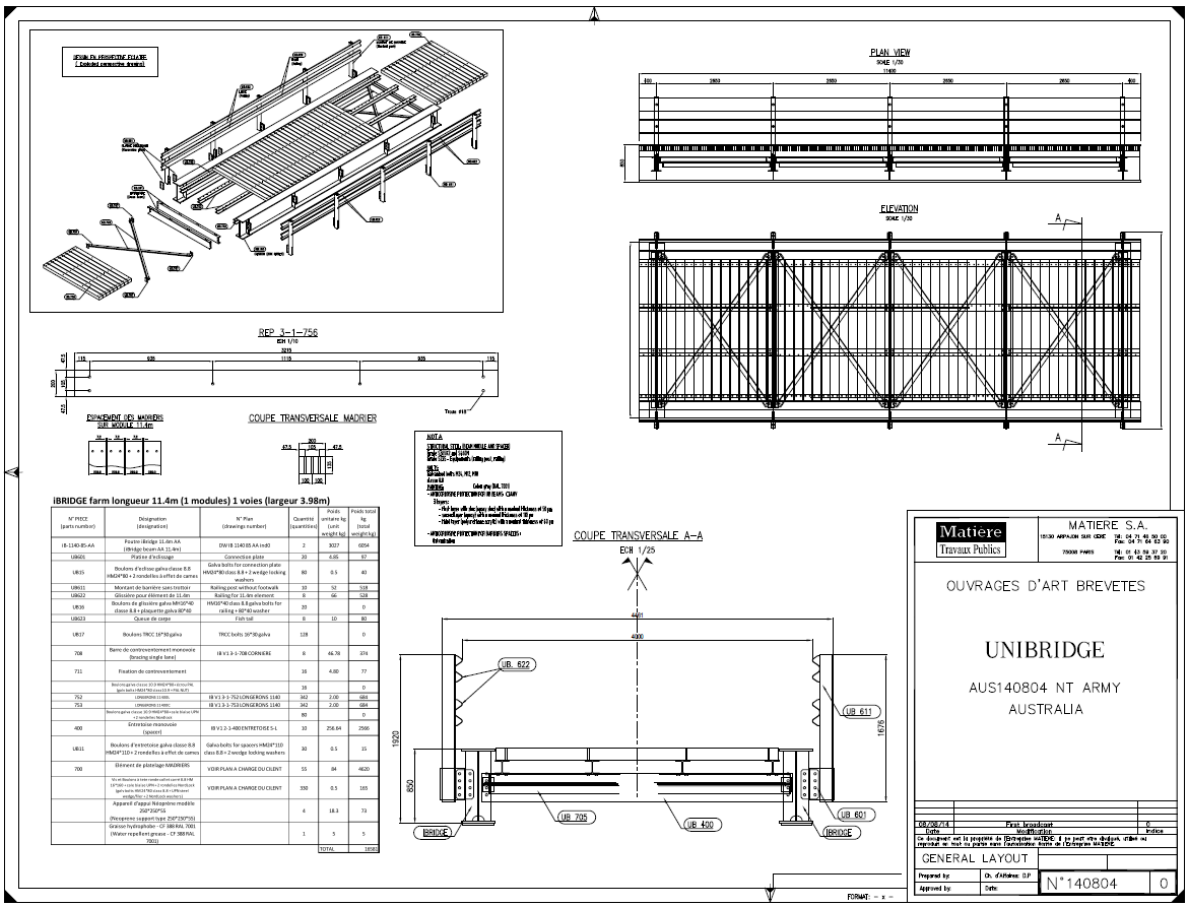

Figure 4: Prefabricated Bridge Design

Vegetation Screens

As illustrated on the Site Plan, the Proposal includes a native vegetation screen along the majority of the perimeter of the Site. The vegetation screen has been designed to help screen views of the Proposal from outside the development. The screens will be 20 metres wide and consist of four rows of plantings. The trees will be planted into mounded beds that will provide protection for young plants which can be susceptible to waterlogging during flood events if they are planted at natural ground level. This is important in this situation as flooding is known to occur at the Site. A design feature that will be particular to this proposal, will be the need to break up the mound lines intermittently to enable flood water to drain unimpeded through the Site.

To ensure the success of the plantings and optimise growth rates, the Proponent will commit to the planting methodologies and maintenance protocols outlined in the draft Landscape Plan provided by Oz Trees. In addition, the vegetation screen will also be maintained in

order to reduce fire risk, for example dead branches will be cleared from beneath the plantings and ground vegetation will be maintained at a maximum height of 100mm in preparation for and during the annual Fire Danger Period (see the Bushfire Risk Assessment and Mitigation Statement).

On the Site's eastern boundary, to the south of Meningoort Road, there is a 6 m wide gap in the Vegetation Screen to allow an existing 11kV distribution line to cross the Site. In accordance with the Powercor guidance[5]', trees planted within 5 m from the edge of the line will be selected and maintained to a height less than 4 m and trees between 5 m and 8 m from the line will be selected and maintained to a height less than 9 m.

An agricultural fence will be installed along the external boundary of the screen and maintained in order to protect the vegetation screens from grazing animals from the broader landholdings and neighboring properties around the Site. Access to the screens for maintenance is provided by 3 m gates in a number of locations across the Site, as shown on the Site Plan.

Asset Protection Zones

Asset Protection Zones (APZs) which are cleared defendable spaces, will be maintained around all tracks and key infrastructure including the Substation Area and Battery Area and the Operations Buildings. All APZs will be 10 metres wide with the exception of the APZ around the Operations Buildings Area which will be 20 metres wide. A crushed rock APZ (26 m x 22 m) surrounds each of the inverters and compliments the internal track APZ. Areas designated as 'APZs' will be a non-combustible mulch or mineral earth in accordance with CFA standards and detailed in the 'Bushfire Risk Assessment and Mitigation Plan'.

Groundcover

Groundcover management at the Site will be important during all phases of the Proposal. As a priority, the Proposal has been designed to minimize the loss of groundcover.

Due to the generally flat nature of the Site large scale earthworks will not be required to construct the Proposal. However, general construction activities would disturb the ground surface of the Site in some areas and include track construction, cable trenching, leveling of the areas beneath the substation, battery area, operational buildings area, inverter stations and the temporary construction compound.

Within the solar arrays, soil disturbance would be predominantly limited to the piles driven into the ground to support the tracking system, along with trenching for the installation of underground cables. A desktop analysis indicates that the need for minor localised earthworks associated with the installation of the tracker infrastructure is unlikely due to the

[5] https://media.powercor.com.au/wp-content/uploads/2018/11/23144235/cppal-planting-trees-near-power-lines-nov-2008.pdf

flat topography of the Site. As such, most of the ground cover will be retained across the Site during the construction process. Consequently, soil disturbance from localised excavation activities will be relatively small, isolated and temporary.

During operation, grass cover will be maintained across the Site both between and under the panel rows to provide groundcover. The groundcover will stabilise soils preventing soil erosion and will assist in localised water penetration. Should mowing be utilised as a method to control grass growth under the solar panels, the grass will be directly mulched back onto the soil surface therefore building soil organic matter and enhancing carbon capture while improving water infiltration.

Water quality protocols include establishing and maintaining ground vegetation cover across the Site to minimise potential for erosion, and consequently, to therefore minimise potential sedimentation impacts to water quality. Groundcover species selection and management will be undertaken in consultation with local agronomists and seek to balance between maintaining groundcover at the Site, and bushfire management objectives to avoid a build-up in combustible vegetation. Protocols for the management and reinstatement of groundcover will be included in the EMP to make sure groundcover is reinstated after disturbance during construction and preserved and managed during the operational life of the solar farm.

Groundcover at the Site will be monitored and will be actively managed through mechanical slashing and/or mowing or grazing as required to reduce the risk of grass fires starting within the Site, and ensuring that fires originating from outside the Site do not intensify as a consequence of entering the Site. During the bushfire season, groundcover (including under panels) will be maintained to achieve a minimal fuel load (<100mm grass height). These management actions will be included in the EMP.

Drain Access

As stated in the Flood Risk Assessment, the drains associated with the Site will need to be maintained to ensure they function effectively. As part of this maintenance it will be important to manage vegetation within the drains. As such, access to drains has been included in the design of the Proposal.

Access to the East West drain will be via the internal track network. Access to the North South drain, and a minor drain near to the Site's northern boundary will be via gates in the security and agricultural fencing as shown on the Site Plan.