URBIS

BARWON SOLAR FARM

Town Planning Report

Prepared for Elgin Energy

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This project is located on Wadawurrung Country.

Urbis Acknowledges and respects the Wadawurrung People as the original custodians of the land, waters and skies, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past, present and emerging whose knowledge and wisdom has, and will, ensure the continuation of cultures and traditional practices.

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CONTENTS

1. Introduction 1

2. Elgin Energy 9

3. Proposed Development 10

4. Community and Stakeholder Consultation 22

5. Planning Framework 25

6. Planning Assessment 54

7. Greater Geelong Planning Scheme 71

8. Matters For Consideration 95

9. Conclusion 106

10. Disclaimer 107

Appendix A Certificates of Title
Appendix B Survey Plan (Veris, December 2021)
Appendix C Site Plan (Urbis, April 2023)
Appendix D Elevation Plan (Urbis, September 2022)
Appendix E Maps (Urbis, December 2021)
Appendix F Landscape Strategy (Urbis, September 2022)
Appendix G Stakeholder Engagement Outcomes Report (Urbis, September 2022)
Appendix H Flora and Fauna Assessment (Biosis, February 2023)
Appendix I Cultural Heritage Standard Assessment (Ecological Australia, October 2022)
Appendix J Agricultural Asessment (Ag Challenge Consulting, March 2022)
Appendix K Hydrology Assessment (Ecological Australia, April 2023)
Appendix L Preliminary Landscape and Visual Impact Assessment (Urbis, September 2022)
Appendix M Acoustic Assessment (Norman Disney & Young, April 2023)
Appendix N Traffic Impact Assessment (Urbis, April 2023)
Appendix O Fire Risk Assessment (Ecological Australia, April 2023)
Appendix P Biodiversity Assessment Report: Wellington Solar Farm Evidence (NGH Environmental, November 2017)
Appendix Q Cultural Heritage Desktop Assessment
Appendix R Residential Property Lease Agreement (Thomson Geer Lawyers, September 2021)

FIGURES

Figure 1 Subject Site Location 7
Figure 2 Subject Site and Neighbouring Properties Boundaries and Titles 8
Figure 3 Markets Where Elgin Energy Operate 9
Figure 4 Proposal Site Layout 11
Figure 5 Design Iteration 1 (Superseded) 12
Figure 6 Solar Tracker Elevation 14
Figure 7 Solar Panels Row Elevation 15
Figure 8 Solar Energy Generation 15
Figure 9 Site Access and Internal Road Network 17
Figure 10 Indicative Proposed Business Identification Signage 17
Figure 11 Vegetation Proposed for Removal 18

Figure 12 Landscape Strategy 20
Figure 13 Zoning Map 26
Figure 14 ESO4 Map 28
Figure 15 ESO 1 Map 29
Figure 16 Significant Landscape Overlay Map 31
Figure 17 Bush Fire Management Overlay 33
Figure 18 Areas of Cultural Heritage Sensitivity 34
Figure 19 Standard Cultural Heritage Assessment Overview 57
Figure 20 Summary of DELWP Native Vegetation Removal Report 84
Figure 21 Visual Assessment 98
Figure 22 1% AEP Maximum Flood Depth 102
Figure 23 Location of Noise Generating Equipment 104

PICTURES

Picture 1 Typical Mounted Panels (single axis tracker) 14
Picture 2 Typical Mounting Frames Used 14
Picture 3 Proposed Perimeter Security Fencing elevation 18
Picture 4 Example CCTV Cameras 18
Picture 5 Typical Planting Section 21

TABLES

Table 1 Existing Site Photos 3
Table 2 Stakeholder Engagement Summary Table 23
Table 3 Identifying suitable locations - Solar Energy Facilities Design and Development Guidelines 2019 58
Table 4 Best Practice for Proponents - Solar Energy Facilities Design and Development Guidelines 2019 63
Table 5 Design Stage - Solar Energy Facilities Design and Development Guidelines 2019 63
Table 6 Construction and Operation Stage - Solar Energy Facilities Design and Development Guidelines 2019 68
Table 7 Application Requirements - Solar Energy Facilities Design and Development Guidelines 2019 69
Table 8 Decision Guidelines - Solar Energy Facilities Design and Development Guidelines 2019 69
Table 9 Plans That May Be Required as a Condition of a Permit - Solar Energy Facilities Design and Development Guidelines 2019 69
Table 10 Farming Zone Considerations 73
Table 11 Farming Zone Agricultural Issues and the Impacts from Non-Agricultural Uses 75
Table 12 Farming Zone Environmental Issues 76
Table 13 Farming Zone Design and Siting Issues 78
Table 14 Bushfire Planning Decision Guidelines 81
Table 15 Application Requirements and Decision Guidelines under Clause 53.13 88
Table 16 Approval of an Application or Plan under Clause 65.01 91

1. INTRODUCTION

This report has been prepared by Urbis Pty Ltd on behalf of Elgin Energy Pty Ltd ('the permit applicant') to accompany a planning permit application to construct a solar installation ('the proposed installation') at 1000 -1320 Little River - Ripley Road, Little River ('the subject site').

This planning report provides details of the proposal, an analysis of the suitability and constraints of the selected site and an assessment of the proposal against the relevant provisions of the Greater Geelong Planning Scheme and relevant Commonwealth and state legislation.

Amendment VC192 changed the Victoria Planning Provisions and all planning schemes by amending clause 72.01-1 to make the Minister for Planning the responsible authority determining planning permit applications for all energy generation facilities that are 1 megawatt in capacity or greater. *The amendment does not change the requirements for a permit in a scheme, if a permit is required or the matters to consider when making a decision.*

The following planning permit triggers apply to the proposed installation at the subject site:

- Use of land for a Renewable energy facility (other than Wind energy facility) within the Farming Zone pursuant to Clause 35.07-1major renewable energy facilities
- Building or works associated with a use in Section 2 - Renewable energy facility within the Farming Zone pursuant to Clause 35.07-4
- To construct a building or construct or carry out works and to remove, destroy or lop any vegetation within the Significant Landscape Overlay pursuant to 42.03-2
- To construct a building or construct or carry out works and to remove, destroy or lop any vegetation within the Environmental Landscape Overlay (ESO1 and ESO 4) pursuant to Clause 42.01-2
- Removal or variation of an easement pursuant to Clause 52.02
- Display of a business identification sign pursuant to Clause 52.05-2
- Removal of native vegetation, including dead native vegetation pursuant to Clause 52.17-1

The following particular provisions apply to the proposed installation on the site:

- Clause 52.02 Easements, Restrictions and Reserves
- Clause 52.05 Signs
- Clause 52.17 Native Vegetation
- Clause 52.42 Renewable Energy Facility

The following specialist consultants have been commissioned to provide the assessments to accompany the planning permit application:

- Aboriginal Cultural Heritage
- Bushfire
- Biodiversity
- Hydrology
- Landscaping
- Traffic Impact Assessment
- Visual Impact and Glint and Glare Assessment

The permit applicant will prepare and provide the required management plans to the relevant statutory consent authority after a permit is issued.

This report is informed and accompanied by:

- Certificates of Title (Appendix A)
- Survey Plan (Veris, December 2021) (Appendix B)
- Site Plan (Urbis, April 2023) (Appendix C)
- Elevation Plan (Urbis, September 2022) (Appendix D)
- Maps (Urbis, February 2023) (Appendix E)
- Landscape Strategy (Urbis, February 2023) (Appendix F)
- Stakeholder Engagement Outcomes Report (Urbis, September 2022) (Appendix G)
- Flora and Fauna Assessment (Biosis, February 2023) (Appendix H)
- Cultural Heritage Standard Assessment (Ecological Australia, October 2022) (Appendix I)
- Agricultural Assessment (Ag Challenge Consulting, March 2022) (Appendix J)
- Hydrology Assessment (Ecological Australia, April 2023) (Appendix K)
- Preliminary Landscape and Visual Impact Assessment (Urbis, September 2022) (Appendix L)
- Acoustic Assessment (Norman Disney & Young, April 2023) (Appendix M)
- Traffic Impact Assessment (Urbis, April 2023) (Appendix N)
- Fire Risk Assessment (Ecological Australia, April 2023) (Appendix O)
- Biodiversity Assessment Report: Wellington Solar Farm Evidence (NGH Environmental, November 2017) (Appendix P)
- Cultural Heritage Desktop Assessment (Ecological Australia, March 2022) (Appendix Q)
- Residential Property Lease Agreement (Thomson Geer Lawyers, September 2021) (Appendix R)

1.1. SUBJECT SITE

The subject site is located in the Balliang/Little River region approximately 30 Kilometres north of the Geelong CBD and 45 kilometres west of the Melbourne CBD. The site is approximately 735ha in size and spans seven separate but contiguous lots (with 5 separate landowners). The site is made up of the following addresses (see Map 2 which shows titles for each):

- 1000 Little River - Ripley Road, Little River. Formally known as: Allot. 24 Parish of Wurdi-Youang
- 1050 Little River - Ripley Road, Little River. Formally known as: Lot 2 TP15944
- 1085 -1135 Ripley Road, Little River. Formally known as: Allot. 23 Parish of Wurdi-Youang
- 1145-1215 Ripley Road, Little River. Formally known as: Allot. 22 Parish of Wurdi-Youang
- 1150-1190 Little River - Ripley Road Little River, this property has 2 parcels formally known as: Lot 1 PS434520C and Lot 1 TP15944.
- 1240 Little River - Ripley Road, Balliang, formally known as: Por. 17 Parish of Wurdi-Youang
- 1320 Little River - Ripley Road, Balliang, formally known as: Lot 2 of LP140470

The key features of the site are:

- Site area is approximately 735ha.
- The landform is a flat to gently undulating plain and is part of the extensive landscape of the Werribee Plains. The site survey identifies that elevation varies across the site between approximately 87 metres and 114metres AHD.
- There are several electricity easements that encumber the site. The site has existing 500 kV and 220 kV transmission lines crossing in the north western and south eastern sections respectively. These lines

have significant transmission capacity and the site is therefore well placed for the export of renewable energy.

- The majority of the land is relatively flat, open plain grassland with scattered vegetation particularly to the south east. Much of the original indigenous vegetation has been removed over the years. Some mature Eucalypts remain sporadically scattered through some the land parcels, along watercourses and along the southern extremity of the Project site.
- The property abuts several roads, some of them un-made, with Little River-Ripley Road being the main sealed road that runs east-west through the site.
- Currently vehicular access is provided off Little River – Ripley Road. There is also an access road located on Mt Rothwell Road to the north of 1000 Little River-Ripley Road, Little River.
- All sites contained within the subject site are currently utilised for farming and or agriculture, namely broadacre cropping for wheat, barley and oilseeds (canola). There is also a considerable area dedicated to grazing of sheep. These lots are not considered to be highly productive nor highly versatile agriculturally due to low and unreliable rainfall, soil quality and access to irrigation.

1.2. EXISTING CONDITION - SITE PHOTOS

The proposed site is highly modified due to farming practices and is currently still being utilised predominantly for agricultural purposes, with majority of the land used for dryland cropping. The Agricultural Assessment produced by Ag-Challenge Consulting (March 2022) (detailed in Appendix J) identified crops of barley, canola and wheat upon an inspection of the site. Crops of vetch and dun peas have also been grown on the property in the past. Grazing of sheep are also currently being undertaken on two of the properties (1000 and 1050 Little River Ripley Road). Through an analysis of an aerial photo of the site dated August 2022 and a site inspection on 21st November 2021 and 20th January 2022 and 7th June 2022, the following pictorial analysis of the existing features has been compiled in Table 1:

Table 1 Existing Site Photos

Picture	Description
	This image is looking south towards the You Yangs, which visually dominates the broader landscape in the region. This highlights that majority of the site is clear of vegetation along a flat plain.
	This image is on approach from the east towards the project. Undulating topography is evidenced, particularly around the road.

Picture	Description
	This view is west from Little River – Ripley Road with the Project visible on both sides of the road. On approach from the east, views to the project are possible from the roadway only once proximate to the project boundary.
	The elevated formation of the Ford Proving Ground test track to the southwest of the Project partially screens views to the You Yangs.
	This image highlights views towards a residence at 1340 Little River-Ripley Road from the road verge. It can be noticed that existing vegetation on the property provides partial screening of views to the Project.
	This image highlights the view from the residence referenced above to the project site. It can be seen from the image that the use of land is currently agriculture.

Picture	Description
	This image highlights the view from the road verge west of the site at Bacchus Marsh-Geelong Road. It can be seen from the image that the land is used for agricultural purposes.

1.3. SURROUNDS

The predominant land uses surrounding the subject site include farming, agriculture, rural residential and reserves. The area is sparsely populated and is made-up of mainly large lots. The surrounding landscape is generally flat, with little variance in the topography. Other than the reserves, most lots are sparsely populated with trees, generally planted for agricultural purposes.

North

Little River Immediately abuts the project site to the north and generally flows east through the Werribee plains to form part of the Port Phillip catchment. This section of Little River is joined by a minor tributary (Sandy Creek) which runs north-east through No. 1150-1190 and No. 1050 Little River – Ripley Road, Little River. Part of 1150-1190 Little River – Ripley Road, Little River is located on the northern side of Little River.

East

The Western Grassland Nature Conservation Reserve is located east of the project site and spans 15,000-hectares of Urban Growth Boundary south-east of Melton and west of Werribee. The area contains the largest and highest-quality example of Natural Temperate Grassland remaining in Victoria, and is a key biodiversity asset for the state. The reserve also protects a range of habitat types including ephemeral wetlands, waterways, Red Gum swamps, rocky knolls and open grassy woodlands.

Part of the reserve has already been acquired by the Department of Environment Land and Water (DELWP). DELWP is actively seeking to negotiate further acquisitions. Parks Victoria has taken on the management of the land acquired so far and is undertaking extensive restoration and rehabilitation works for improve the quality of the Natural Temperate Grassland and habitat for threatened species.

Immediately east of the site's southern lots, separated by Mt Rothwell Road, is the Mt Rothwell Estate and homestead which is listed on the Victorian Heritage register. The entrance to this property is adjacent to site entrance along Mt Rothwell Road and the main entrance to the Mt Rothwell conservation centre directly to the south.

South

Extensive granitic crops to the south of the site has influenced southern landforms, notably the small granite outcrop Mount Rothwell, as well as the dominant granite monolith known as the You Yangs.

The Mount Rothwell Conservation and Research Reserve is an immediate neighbour to the south of the site. Comprising of importantly predator free land along with a Biodiversity Interpretation Centre. The conservation reserve is a critical location for the management of high conservation values species breeding and research programs. Located at 5 Mount Rothwell Road, Little River, the 420-hectare fenced site is dedicated to the research, conservation and protection of endangered species in a predator-free zone.

The You Yangs are found further south of the site, which are a series of granite ridges that dominate the skyline up to 319m above the low-lying Werribee Plain. The name "You Yangs" comes from the traditional Aboriginal words *Wurdi Youang* or *Ude Youang*, which has the broad meaning *Big mountain in the middle of*

a plain or large hill. A dominant geological feature, the You Yangs are prominent remnants of old volcanic vents and granite monoliths within the plains. With exception of this geological feature directing the landscape, the landscape is gently undulating too almost flat.

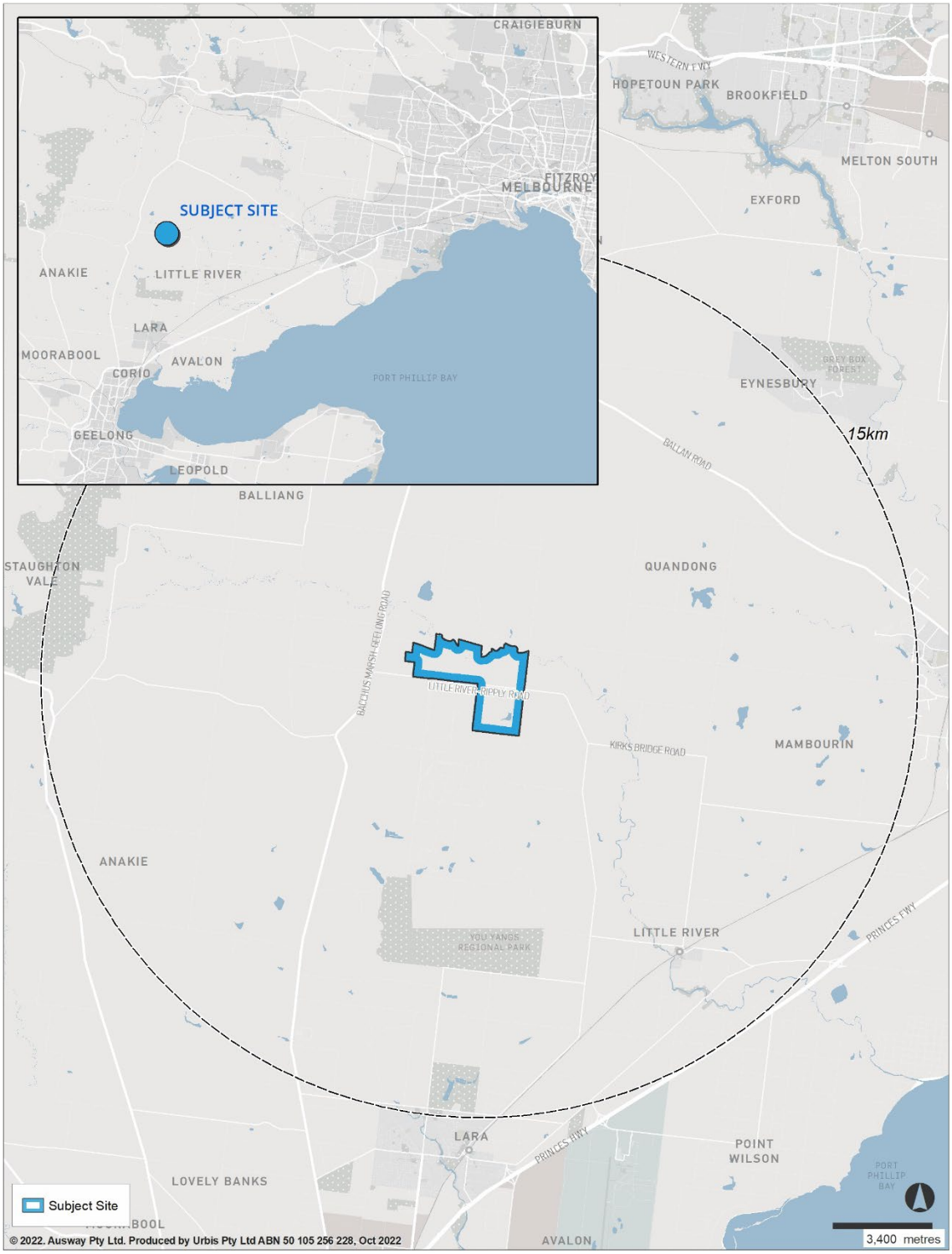
West

A part of the old landscape which predates basaltic extrusions, the west of the site is underlain by highly weathered sandstones and siltstones.

The Ford Proving Ground is to the west of the site, where the development and validating testing of new vehicles occurs. It is important to note that although the site is in the Farming Zone, it is considered an industrial use rather than agricultural use. There is unlikely to be any visual or amenity impacts from the proposed development to this site.

The more recent expansion of the metropolitan Melbourne area to the hinterland north of Werribee, along with an improvement to the rail link connecting Melbourne and Geelong, has generated an increased interest in the Little River and Bacchus Marsh area. Limited subdivision and closer residential development to rural properties around Balliang and Anakie is evident, particularly to the west of the project site.

Figure 1 Subject Site Location



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LITTLE RIVER PROPOSED SOLAR FARM SITE

SITE LOCATION

Source: Urbis 2022

Figure 2 Subject Site and Neighbouring Properties Boundaries and Titles

URBIS

LITTLE RIVER PROPOSED SOLAR FARM SITE

TITLES

Source: Urbis 2022

2. ELGIN ENERGY

Elgin Energy (**Elgin**) is an international renewable energy developer specialising in solar and battery development who were founded in Dublin, Ireland in 2009.Elgin Energy has over 11.5GW of projects in development across Australia, UK, and Ireland.

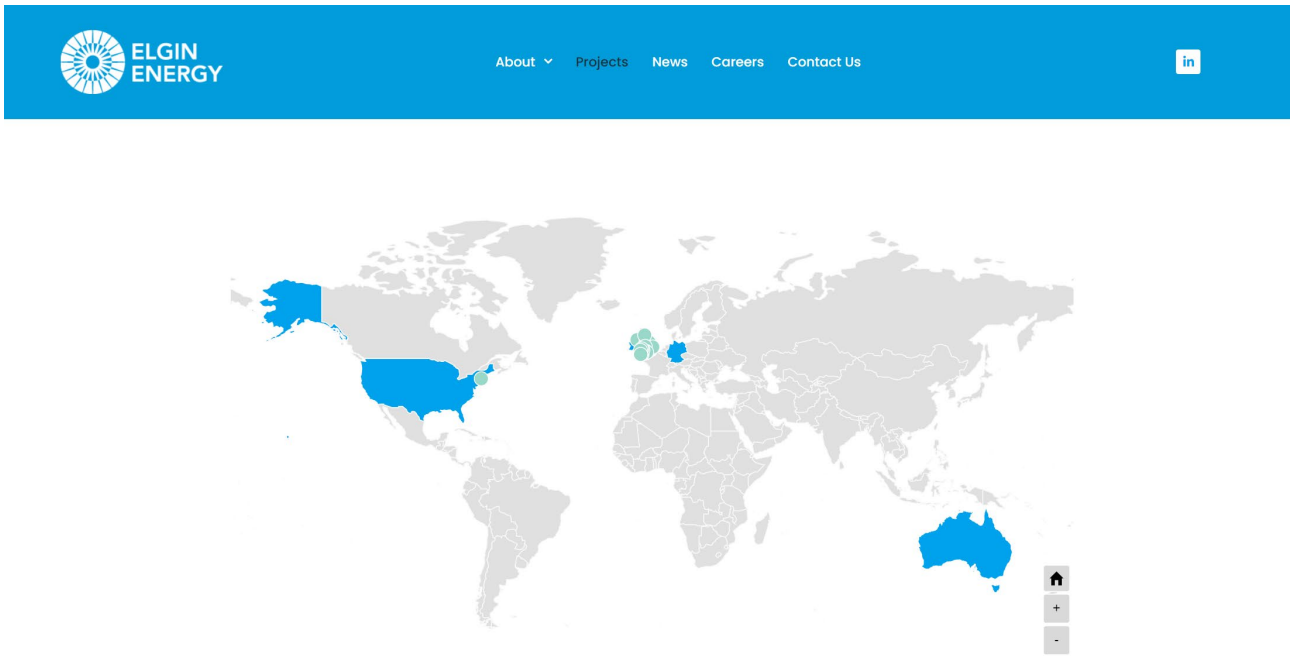
The company delivers utility-scale solar and storage projects from site origination through the development process to grid connection. With a 98% success rate in securing planning permission, Elgin Energy has secured consent on 70+ projects (totalling circa 800MW) with 26 projects (320MW) delivered to market to date across the UK & NI including the largest solar farms in Scotland and Northern Ireland.

Elgin Energy has been present in the Australian market since 2018 and is developing a pipeline of over 2 gigawatts of Solar and battery storage projects throughout NSW and VIC.

Elgin Energy works with long-term strategic partners to deliver projects to the energization and provides asset management services through their operational life across three key markets of the UK, Australia, and Ireland (See Figure 3).

Elgin have earmarked this project as a landmark project in their portfolio for Victoria. This will constitute the largest generator of renewable energy in proximity to both Geelong and Melbourne and represents a significant investment in the State of Victoria and helping the State achieve its renewable energy targets. Elgin are committed to the construction of the project and pending planning approval it is shovel ready aiming to be in operation in 2025.

Figure 3 Markets Where Elgin Energy Operate



Source: Elgin Energy 2022

3. PROPOSED DEVELOPMENT

3.1. PROJECT DESCRIPTION

The proposed development by Elgin energy is to construct and operate a solar farm of up to approximately 330 MWp (Megawatt- peak) and battery energy storage system (BESS) of up to approximately 500MW at 1145-1215 Little River-Ripley Road, Victoria (known as Barwon Solar Farm). Barwon Solar Farm is a 735-hectare site located in the Greater Geelong City Council area.

The subject site was considered suitable for a solar energy facility of this size and scope because of its location, flat topography, ease of access and minimal impacts to site conditions and planning constraints. The site also has direct proximity to grid capacity that can support a large scale project. This combined with the fact that the site receives an abundance of solar resource, makes it an ideal site for generating solar energy.

The Barwon Solar Farm represents one of the largest solar projects in Victoria to date. The facility alone will generate enough clean renewable energy to power the equivalent of approximately 98,000 homes annually, creating approximately150 jobs during construction and investing over 500 million dollars into regional Victoria and the Greater Geelong region. This large scale project will contribute significantly to Victoria's renewable energy generation targets (50% by 2030), aiding in the reduction of greenhouse gas emissions (net zero by 2050)

3.2. LAYOUT AND BUILT FORM

The solar facility and ancillary equipment will encompass a majority of the site spanning across seven separate but contiguous lots (with 5 separate landowners). As shown in Figure 1 (an indicative outline of the extent of the proposed development layout), solar panels will cover approximately 505 hectares of the total site area (65%). This coverage has been carefully designed and limited by native vegetation, cultural heritage constraints and to protect the amenity of surrounding properties.

The subject site will include the following properties, either side of Little River-Ripley Road: 1000, 1050, 1085-1135, 1145-1215, 1150-1190, 1240, 1320 Little River-Ripley Road, Little River/Balliang VIC 3211.

The facility will consist of the following:

- The installation of 540,690 ground mounted solar photovoltaic (PV) modules (panels), which use a single axis tracking solar technology with an approximate capacity of 330MWp. Each Panel will measure approximately 2.4m (length) x 1.303m (width). Once mounted on the frames and fully tilted, the panels will be capable of reaching an overall height of no more than 3.2 metres above ground level.
- Installation of a battery energy storage system with an approximate capacity of up to 500 MW.
- Installation of approximately 74 inverters/transformers housed in a cabin-like structure of approximately 6m (length) x 2m (width) x 3m (height). Inverters and transformers are combined and are mounted on a concrete base.
- Installation of a 1 x 500MW (approx.) Battery energy system and housing structure, approximately 12 metres (length) x 2.4m (width) x 2.891m (height). The Bess includes approximately 136 Inverters.
- Internal road system
- Ancillary infrastructure, including:
  - A 2.3m high chain mesh fence installed around the solar farm. The purpose of the fence is to deter theft or vandalism and prevent unauthorised access to the solar farm.
  - Security cameras
  - Substation control room approximately 13.2m (length) x 5.8m (width) x 4.6m (height).
  - Water tanks approximately 4.5m (width) x 3.05m (height)
  - Compost toilet
  - Business identification signage (3 signs)

Figure 4 Proposal Site Layout

Source: Elgin Energy 2022

3.2.1. Layout of Facility

The solar facility has been carefully designed over 18 months to respond to the site's context, opportunities and constraints and DELWP's *Solar-Energy-Facilities-Design-and-Development-Guideline-August-2019*. The design layout considers:

- Native Vegetation
- Cultural Heritage
- Visual Impact to neighbouring properties
- Bushfire Mitigation
- Impacts to waterways
- Noise
- Efficiency and economic viability of the solar facility

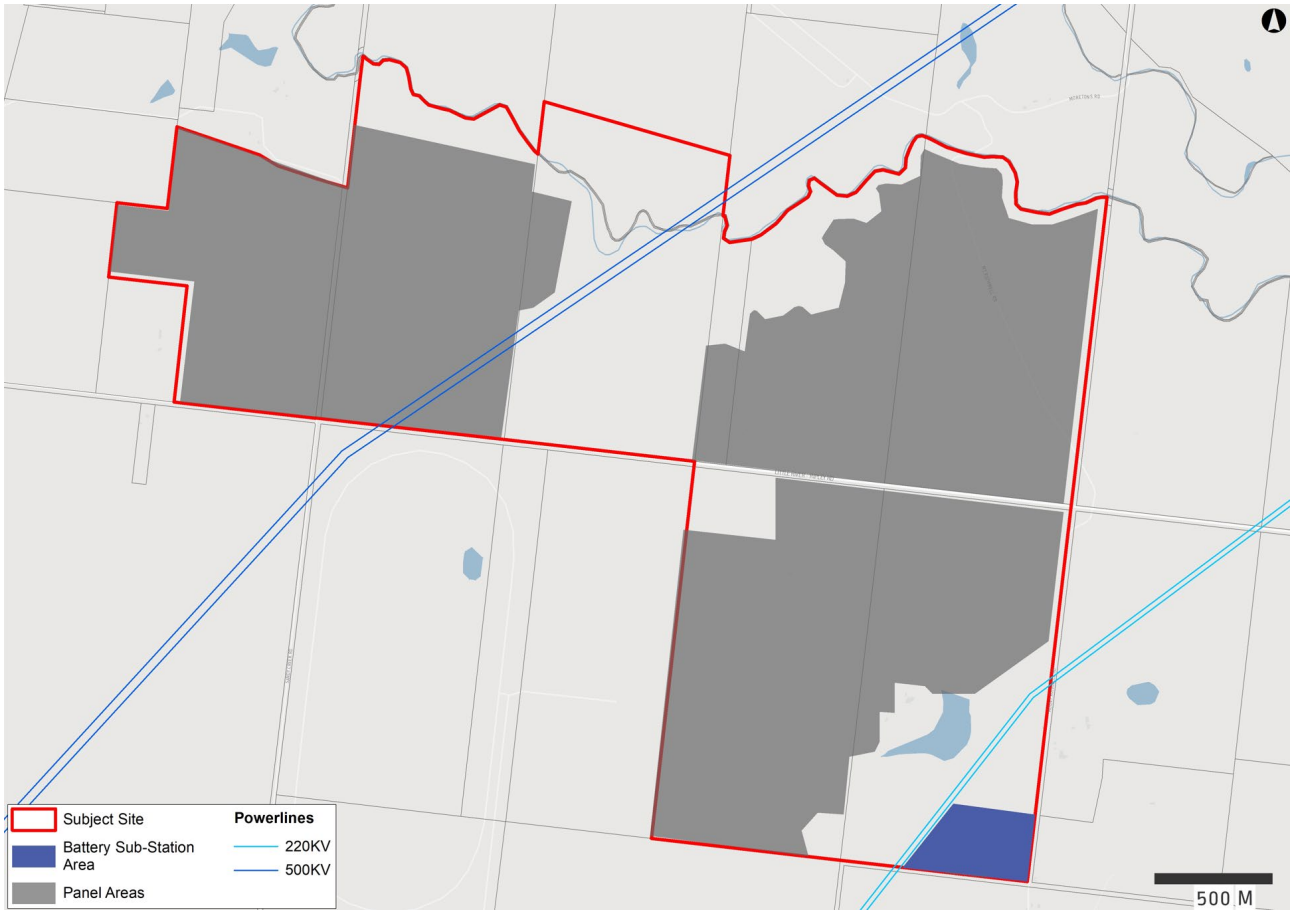
The development design process has balanced the above matters with the economic viability of the development. The high voltage (220KV) connection requires a minimum size for the project to be economically viable.

The design evolution is summarised in three key iterations below.

Design 1 (See Figure 5)

Urbis and Elgin Energy mapped all the ecology constraints surveyed by Biosis, as well as the results of the standard Cultural Heritage assessment. An initial design was produced that sought to develop over all areas of patch vegetation (plains grassland) recorded as low quality and to avoid all areas of cultural heritage recorded during the standard assessment and provide a 100-200m setback from Little River and Sandy Creek. This design resulted in a development footprint of 580ha (providing for 350MW). However, once this design was reviewed it was found that it removed 70ha of patch vegetation (plains grassland) and although this was recorded as poor quality it was considered that this would have an unacceptable impact on native vegetation, in particular Golden Sun Moth habitat. A second design iteration was therefore required to demonstrate further avoidance whilst maintaining yield.

Figure 5 Design Iteration 1 (Superseded)



Source: Urbis 2022

Design 2

The second design sought to avoid all areas of patch native vegetation by increasing setbacks from waterways and impacting into some areas of cultural heritage sensitivity. To maintain yield, development and removal of native vegetation extended into patch vegetation from areas VQA2 and 26 which resulted in removal of 10ha of patch vegetation (see figure 3 within Flora and Fauna Assessment contained within Appendix H). This design ended up with a development footprint of 450ha. However, the resulting yield was below a threshold that would be considered economically viable to connect to the 220kV powerlines. Furthermore, the complex assessment testing would be significant and provide risks to the project of the CHMP not being approved. Finally, this design provided a fragmented design that would not connect to areas of panels in effect 2 separate developments that would not be developable from a constructability perspective. Given these issues a revised design was required.

Design 3 (The proposed Design, see Figure 4)

The third design was revised from design 2 to:

- Increase all setbacks from waterways to a minimum of 50m and maximum of 300m
- Avoid all river terrace areas as they have high sensitivity, as found during archaeological assessment, and supported by the RAP.
- Allow limited patch vegetation removal from areas VQA 5, 6, 16 and 30. These are all areas of poor quality vegetation impacted by farming practices (total 18.3ha including scattered trees). All other areas of patch vegetation are retained (all areas of high quality and majority of poor quality vegetation).
- Avoid removal of any patches of trees with exception of 3 patch trees in VQA 30 and 6 (See figure 3 contained within the flora and fauna assessment contained within Appendix H).
- Specifically avoid tree removal from 22/PP3910 to avoid observed black falcon nests.
- Relocate the BESS and substation as a result of consultation with nearby neighbours, to reduce visual impacts to their properties.
- Adjust setbacks from western and eastern neighbouring properties to 30m.
- Investigate potentially conserving up to 40ha of land either side of Sandy Creek for revegetation, relocation of trees for creation of habitat and the opportunity to potentially provide access for the Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC) for the life of the solar farm. Initial discussions with WTOAC have not nominated a use for the land, but potentially it could be used for interpretation, land rehabilitation and community use.

Design 4

Following feedback from Department of Environment, Energy and Climate Action (DEECA) further refinements were undertaken on the design to further minimise impacts on native vegetation.

- Adjust the locations of fences and access tracks, to avoid individual trees where possible.
- Protect a number of scattered trees in the central portion of the site to increase the area of retained vegetation and improve connectivity.
- Review Sections of low quality VQA 16 and VQA 19 to provide additional panel area and connection through the site in order to minimise removal of scattered trees. Most remnant grasslands within these study areas were unsuitable for cultivation, including rocky areas, or low-lying seasonally wet areas and thus no additional vegetation was impacted upon conclusion of this review.

This final design develops 505ha of land and provides the minimum system size to make the development economically viable. This design avoids the majority of native vegetation, protects amenity to neighbouring properties and also avoids impacts to cultural heritage recorded from the standard assessment, as well as avoiding anticipated areas of further heritage sites expected from the complex assessment.

As outlined above, this design process has been adjusted and refined over 12 months using evidence gathered from field studies, taking into account feedback from the local community and other stakeholders in a considered design response. We believe the final design accounts for all constraints on the site whilst balancing constructability and the objectives for solar facility energy generation.

3.2.2. Solar Panels

Description

The proposal will mainly consist of the installation of 540,690 PV solar modules, with a combined energy capacity of approximately 330MWp. The glass surfaced panels are coated to maximise daylight absorption, and thus minimise glare potential. Other materials are an encapsulant, a rear layer and a frame around the outer edge.

The panels will be attached in a single portrait configuration to horizontal mounting frames (outlined in Figure 6 and Figure 7). The panels will ‘track’ the sun in an east to west plane to maximise solar exposure. The mounting frames will be made of either galvanized aluminium or steel and will have a rough matte finish, rather than a polished finish.

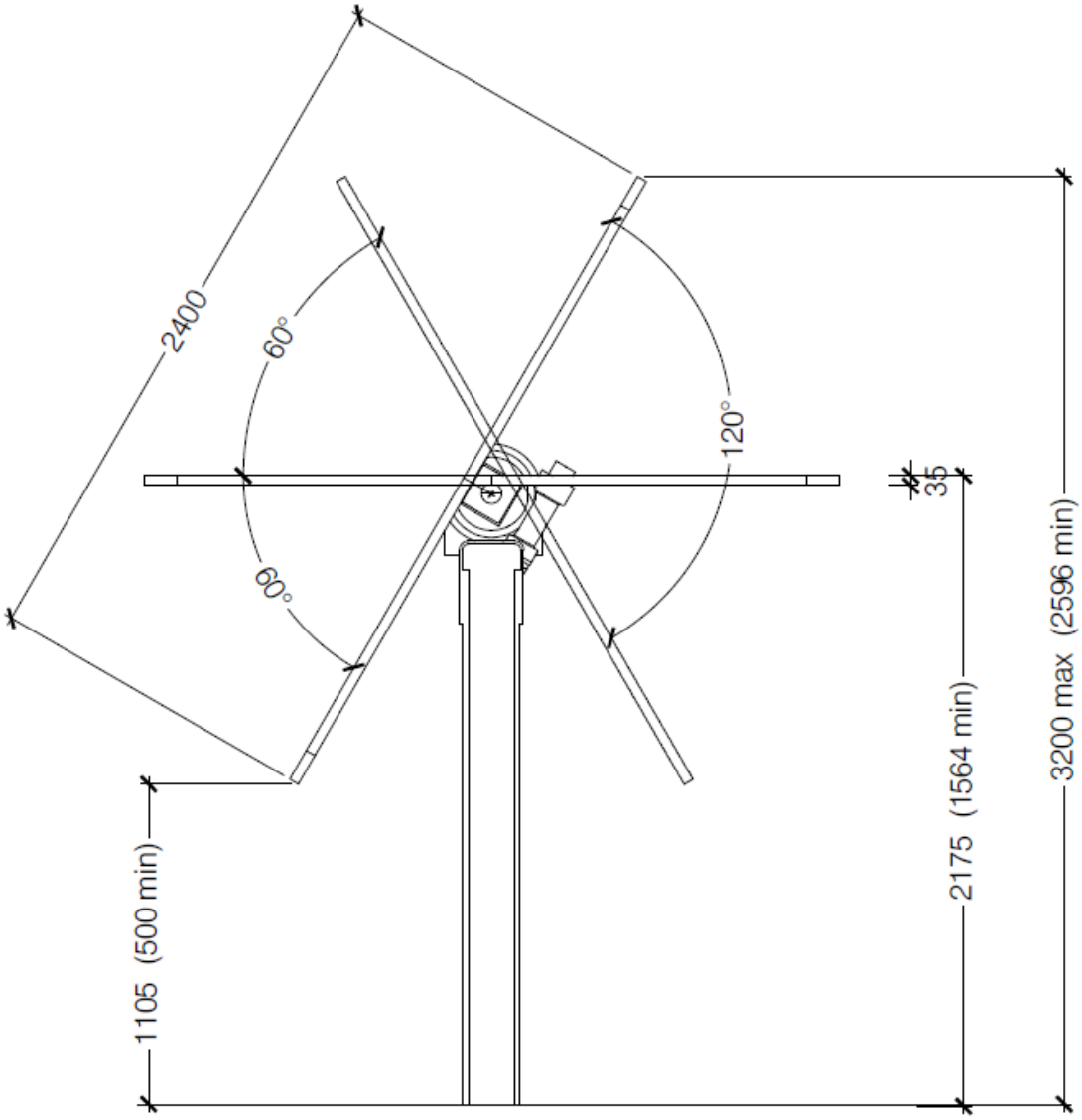
Picture 1 Typical Mounted Panels (single axis tracker)

Source: MBT Energy (accessed October 2022)

Picture 2 Typical Mounting Frames Used

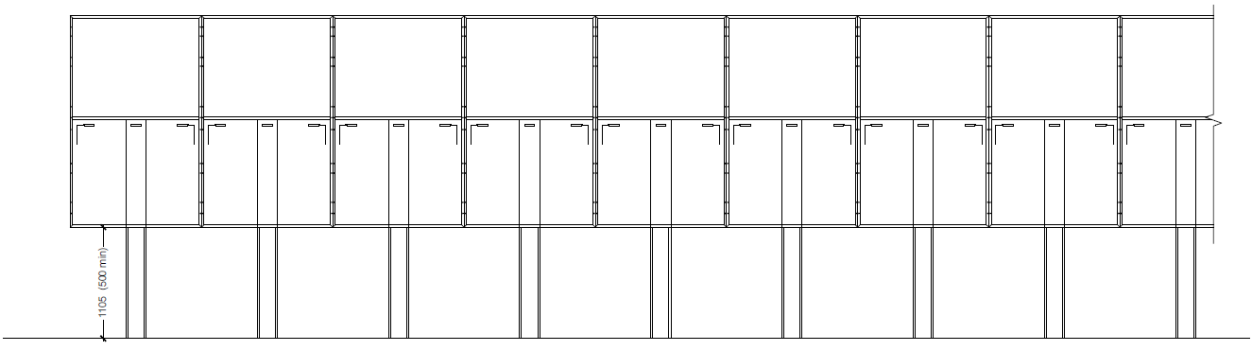
Source: PV Magazine (accessed October 2022)

Figure 6 Solar Tracker Elevation



Source: Urbis 2022

Figure 7 Solar Panels Row Elevation



Source: Urbis 2022

Construction

The mounting frames are usually pile driven into the ground, and no concrete foundations are required. The base of the frame piles are thin, 'H' or 'Z' shapes, thus they have very little impact on the ground and do not require any prior excavation. This means that during construction patches of grass are relatively undisturbed and not impacted or lost across the project area. The frames are driven to a depth of approximately 1.5m. At the end of their operational life when the site is decommissioned, the frame piles are simply pulled out from the ground causing minimal ground disturbance. This light construction approach also minimises impact upon potential archaeology remains. In some areas where there is depth to rock is below 2M and piling refuses there is potential for the pile foundations to be pre drilled.

3.2.3. Inverters

Panels generate Direct Current (DC) electricity which must be converted into Alternating Current (AC) before being fed into the local electricity grid network.

This is done by inverters of which approximately 210 are proposed for this development. The combined inverters / transformers are housed together.

3.2.4. Transformers

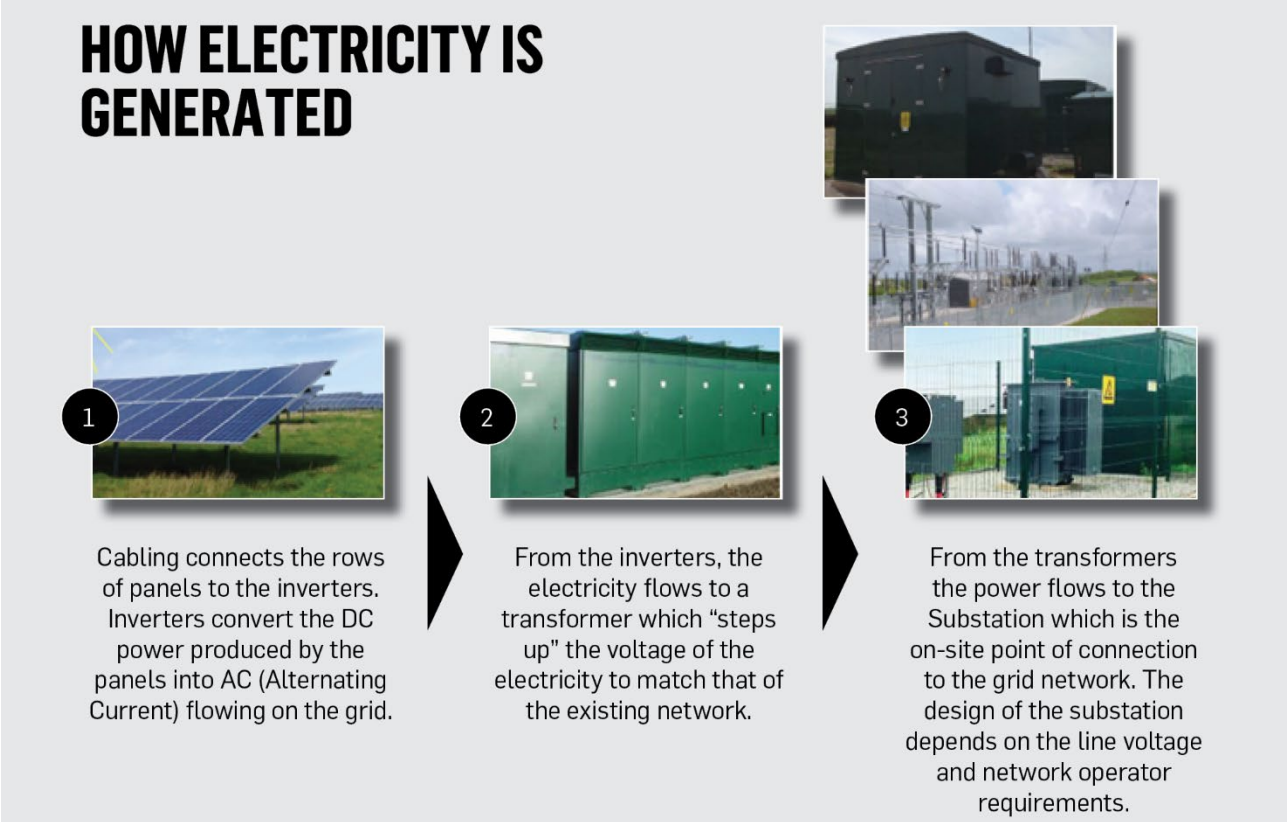
The transformer transforms electrical energy from one circuit to another and allows for the energy generated to be fed into the local grid network. Approximately 74 transformers are housed together with the inverters.

3.2.5. Substations

Substations are the on-site point of connection from where electricity enters and exists the transmission network. The substation is comprised of a switchgear which facilitates the connection or disconnection of electrical assets. Substation switchgear also acts as a safety mechanism to protect the solar farm and BESS from faults in the transmission network, and vice versa. It detects and disconnects electrical circuits if there is a fault in the system, much like a household fuse box.

The network operator (AEMO) requires a security light to be affixed to the exterior of the Network Substation for health and safety reasons. If an emergency repair crew is required in hours of darkness, the light allows them to safely access the substation to undertake the repair work. The motion sensor light only activates when the substation is approached and it will not be illuminated on a permanent basis. No other site lighting is required or proposed. One Customer Substation and One switchgear substations are proposed.

Figure 8 Solar Energy Generation



Source: Urbis 2022

3.2.6. Site Access and Internal Road Network

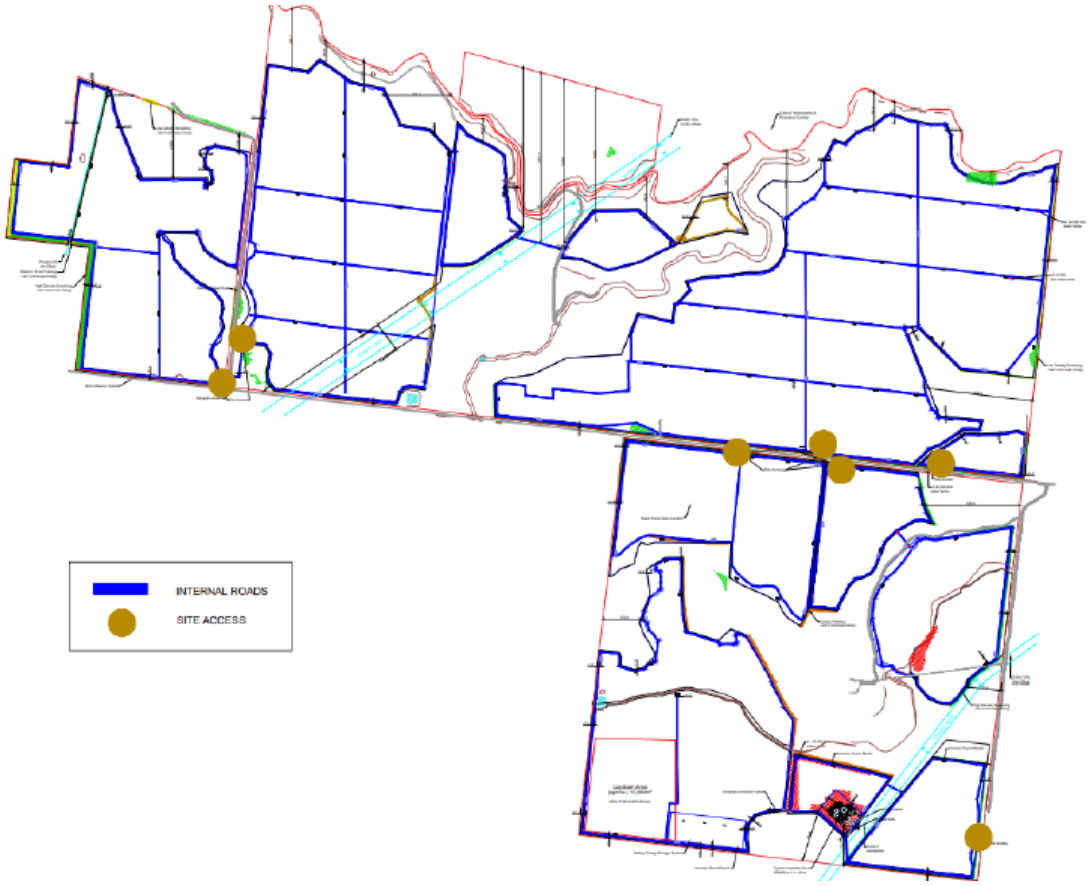
There will be approximately six vehicle access points to the site in order to comply with the Country Fire Authority (CFA) requirements. Five of which will be from Little River Ripley Road and one from Mt Rothwell Road located near the south-eastern extent of the site (this entrance will not be used for construction). There will be two access points for accessing the northern portion of the site, west of the biodiversity corridor, two access points for accessing the northern portion of the site east of the biodiversity corridor and two access points for accessing the southern portion of the site (See Figure 9).). All new created access points will utilise the Department of Transport and Planning typical access to rural properties design based on the ability to accommodate b-double trucks and a CFA firefighting vehicle.

All internal roads have been swept-path tested using a CFA fire truck to ensure compliance and is shown in Appendix O. All service vehicles associated with the development will also access the site from these entry points. The specific access point for service vehicles will depend on the task being undertaken and will likely change on a day-to-day basis.

There are several roads located within the site. They are broken down typically by their function. These functions are:

- Site ring road (enabling access to all parts of the site).
- Internal access way (the primary function of servicing the panels).
- The proposed location of vehicle access points and internal road network is outlined in Figure 9.

Figure 9 Site Access and Internal Road Network

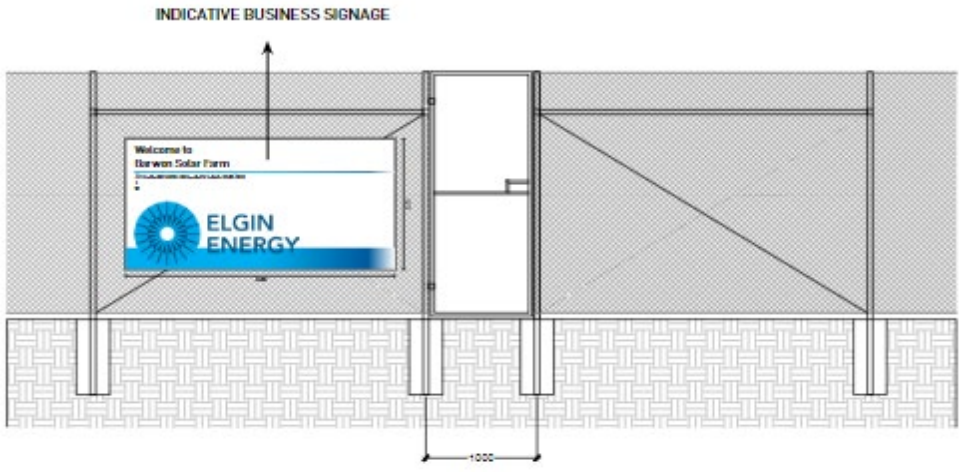


Source: Elgin Energy 2022

3.2.7. Signage

The indicative signage at the main access gate will display a flush 2.4m x 1.2m aluminium business identification sign, with a total area of 2.88m^2 (see Figure 10). A maximum of 3 signs will be allowed (1 per main access gate). An Elevation Plan (Urbis, September 2022), including the specification details for indicative signage is detailed at Appendix D of this report.

Figure 10 Indicative Proposed Business Identification Signage



Source: Urbis 2022

3.2.8. Connection to the Grid

The project will connect to the grid via the existing Geelong Terminal to Keilor Terminal 220 kV overhead transmission line which passes through the southwest corner of the site.

Elgin Energy submitted a connection enquiry to AEMO (the local network service provider) on the 1st of October 2021. Their response provided guidance on an appropriate connection location and configuration for the project. Given the network strength at the connection location, when assessed against the requirements of the System Strength Impact Assessment Guidelines, AEMO determined that a Full Impact Assessment is not required for the project.

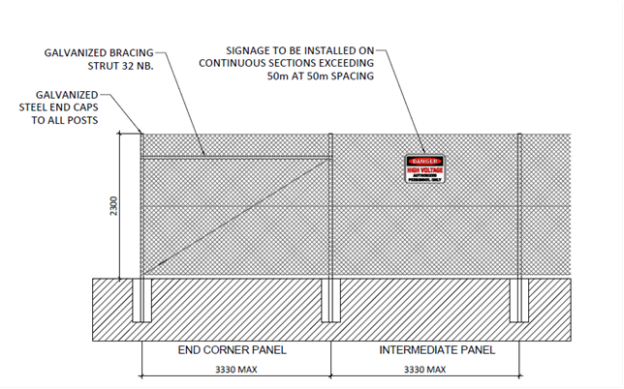
Furthermore, Elgin Energy has engaged with AEMO for a non-compulsory 'Pre-Application' package. The purpose of which was to provide greater certainty about the proposed connection earlier in the overall connection process. The outcome of AEMO's internal congestion modelling was positive and no network constraints were found to impact the solar farm and BESS. (NEM).

3.2.9. Security fencing and Cameras

A 2.3 m high chain mesh fence will be installed around the solar farm. The purpose of the fence is to deter theft or vandalism and prevent unauthorised access to the solar farm.

In order to monitor the site and detect any unauthorised access, motion sensor CCTV cameras will be erected around the site perimeter on poles of approximately 3 m in height. The cameras are directed into the solar farm, avoiding impinging on the privacy of nearby properties, and employ infrared technology so no lighting is required.

Picture 3 Proposed Perimeter Security Fencing elevation



Source: Urbis 2022

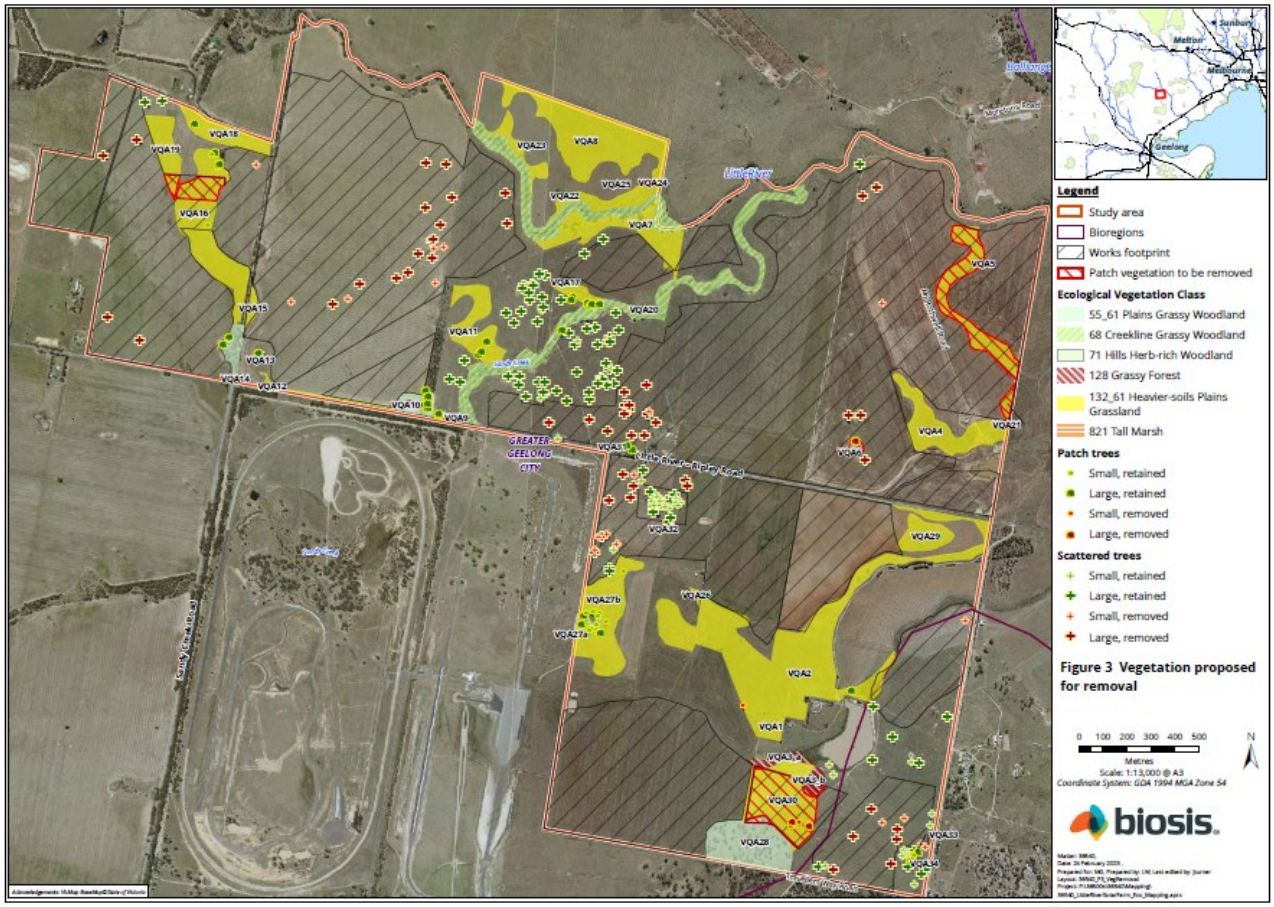
Picture 4 Example CCTV Cameras

Source: Urbis 2022

3.2.10. Natural Vegetation Removal

The proposed removal of native vegetation was assessed in accordance with the concept design, a summary of vegetation removal is shown in Figure 11 below.

Figure 11 Vegetation Proposed for Removal



Source: Biosis 2022

Based on the current design, the proposed development will require the removal of a total 18.330 hectares native vegetation, this includes:

- 14.294 hectares of patch vegetation. 5 Patch Trees (2 live Large Old Trees, 1 dead Large Old Tree and 2 smaller live trees)
- 70 Scattered Trees, including:
  - 46 Large Old Trees
  - 4 dead Large Old Trees
  - 20 smaller live trees.

Spatial data of proposed vegetation removal were submitted to DELWP's native vegetation support team, who provided a Native Vegetation Removal Report for the project. This is provided in Appendix 7 of the Flora and Fauna assessment prepared by Biosis (February 2023).

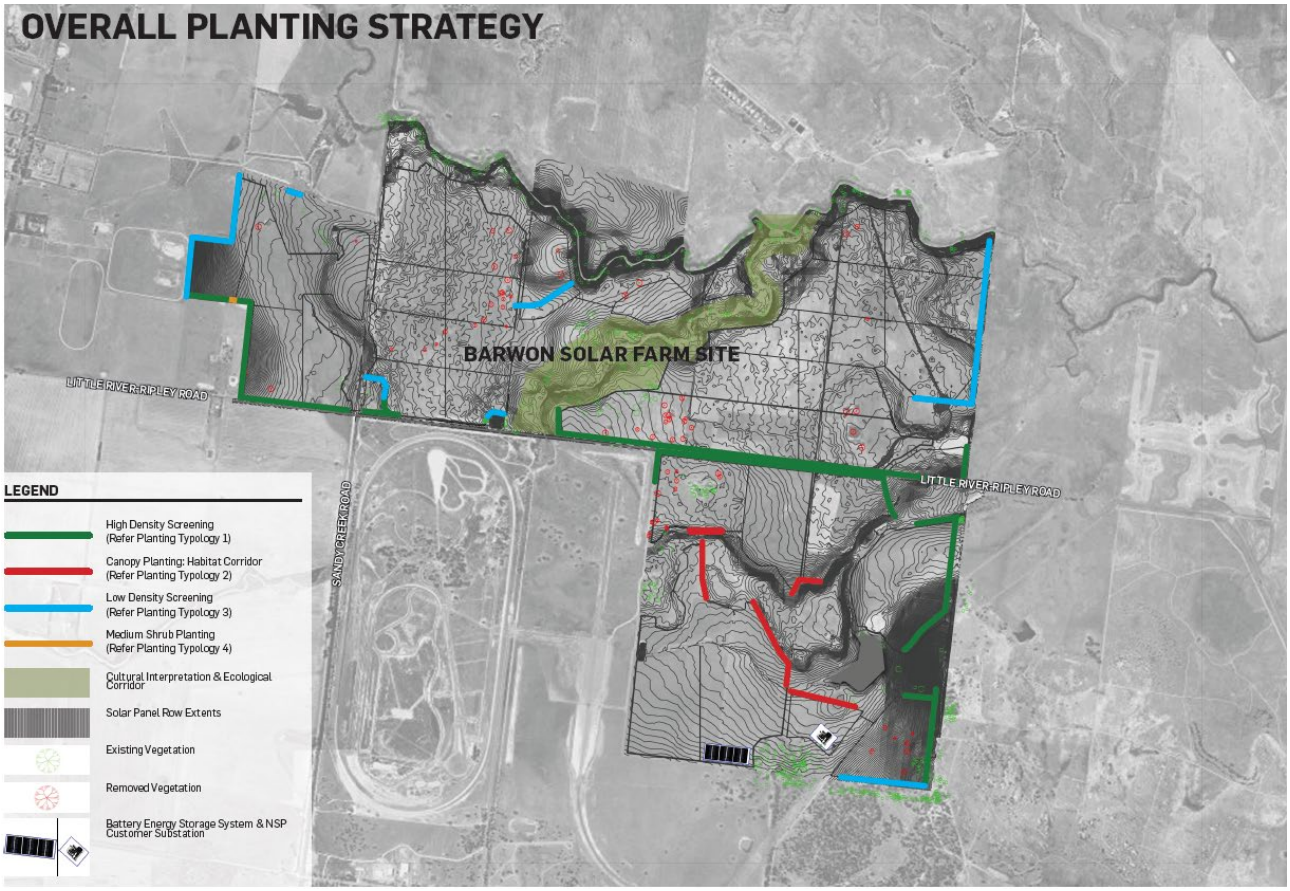
3.2.11. Setbacks and Landscaping

Setbacks and landscaping vary across the site and have been designed based on amenity considerations to adjacent sites. A 5m setback from external fencing will enable the establishment of buffer planting to screen the proposal from surrounding sensitive viewpoints.

The Project has exposed boundaries to the east, south and west which will be planted with screening species. The northern boundary is well screened by vegetation lining the Little River, with no proximate sensitive viewpoints.

Setbacks to the southern, western and eastern boundaries will generally be a minimum of 18 metres from the property boundary to the panel installation. In addition, the northern boundary features significant setbacks and replanting along the Little River waterway for the partial offset of vegetation removal. This provides setbacks between the installation area and properties to the north between 50m and 650m.

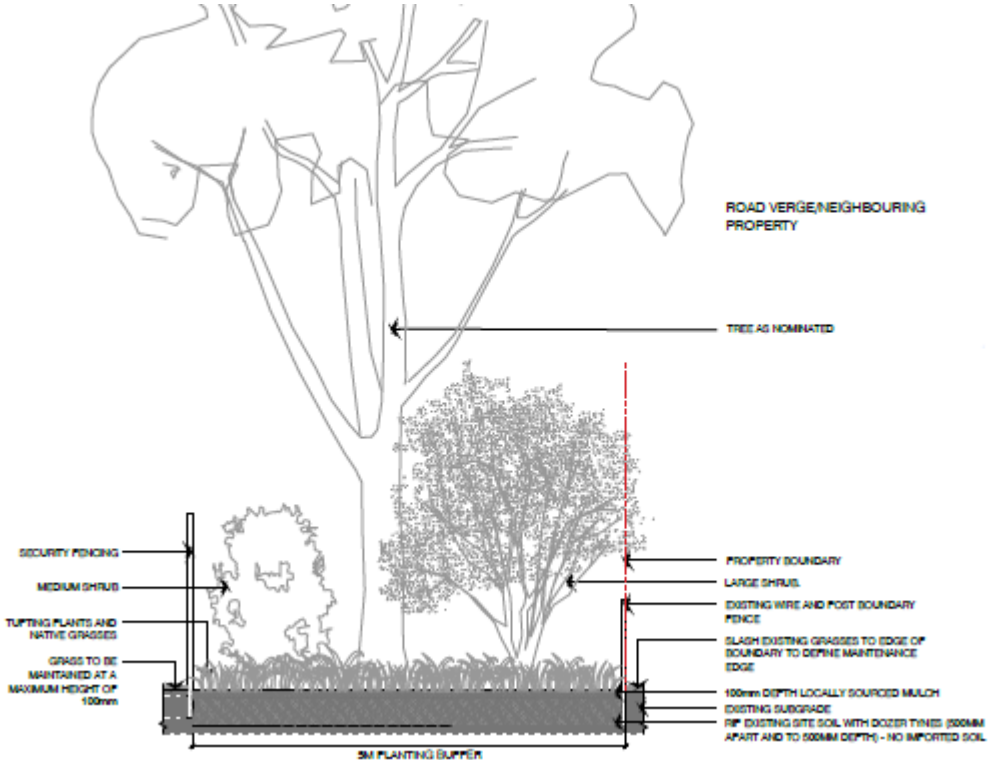
Figure 12 Landscape Strategy



Source: Urbis 2023

The planting palette has been carefully selected to accommodate existing ecologies around the site, providing a diverse selection tailored to the native species endemic to the area. The screen planting will differ according to location around the site, while still respecting the site's unique existing character and form.

Picture 5 Typical Planting Section



Source: Urbis 2022

3.2.12. Ancillary infrastructure

The proposal will include the following ancillary infrastructure:

Communication Monitoring house

A Communications building is required to enable 24-hour remote monitoring of performance and security.

Security cameras and fencing

To monitor the site and detect any unauthorised access, motion sensor CCTV cameras will be erected around the perimeter of the site and by the access gates on poles (approx. 3m in height) as shown on the layout plans.

Composting toilets

A composting toilet will be provided onsite for operators and maintenance staff. The toilets are waterless, chemical free and self-composting. Toilets use a dehydration process resulting in an order free compost which is collected annually for processing off site.

4. COMMUNITY AND STAKEHOLDER CONSULTATION

Community consultation and engagement is an integral part of the design process when undertaking the development of renewable energy facilities in Victoria. The Department of Environment, Land, Water and Planning (DELWP) has produced a guide for renewable energy developers to undertake for community consultation.

Urbis prepared the Community and Stakeholder Engagement Strategy and undertook the engagement in line with the strategy. The draft Stakeholder Engagement Strategy was prepared to align with DELWP's *Solar Energy Facilities, Design and Development Guidelines* and the International Association of Public Participation's (IAP2) *Public Participation Spectrum.* The draft was updated in line with feedback issued on 23 March 2022 from DELWP.

The activities outlined in the strategy sought to deliver an appropriate and relevant engagement process and provide opportunities for the community and stakeholders to learn about the proposal, understand the process and provide feedback which will inform design updates and the planning report submission, along with the site layout plan, elevations or specification sheets and all technical reports.

4.1. ENGAGEMENT

As part of the larger planning process, Elgin Energy and Urbis Planning team were responsible for engagement with the relevant agencies, landowners and land users and stakeholders involved in prospective resource developments (such as owners of mining leases, petroleum production and exploration licences).

In addition, Urbis's Engagement team was responsible for engagement with the broader community. Engagement activities included letterbox drops, project specific website content, community and stakeholder briefings, information drop-in sessions and enquiry management through the duration of the planning process. The processes and outcomes are outlined below:

Local Government

Urbis on behalf of Elgin Energy consulted with officers from the City of Greater Geelong (Council) via phone and email on 20 June 2022, requesting a meeting to outline the project and to provide a briefing information pack. Council declined this invitation due to not being the responsible authority for the development. No feedback from Council has been received to date. While Council is not the responsible authority, Council appreciated being informed of the project details but provided no comments on the proposal.

City of Greater Geelong will be a referral authority under S52 of the Greater Geelong Planning Scheme.

Relevant Agencies

Elgin Energy held meetings with DELWP's Development Approvals and Design - Renewables team to discuss the project in June 2021, 21 January 2022, 23 January 2022 and via various emails and phone calls up to 12 September2022. These discussions were based around the project, its potential impacts in terms of visual impact, cultural heritage and native vegetation as requirements for the planning permit application and stakeholder engagement that was required, including the City of Greater Geelong.

As part of these discussions a meeting was also held with the Barwon South West Regional team specifically around native vegetation impacts, impacts to bird species and mitigation measures to address any impacts. These issues have been specifically addressed as part of this application and also detailed in the Flora and Fauna Assessment (Biosis, February2023) contained in Appendix H.

Letters/emails were also sent to the following agencies:

- Country Fire Authority (CFA)
- Environment Protection Authority (EPA)
- Department of Transport (DoT)
- Emergency Management Victoria - Catchment and Environmental Protection
- Rural water corporation: Southern Rural Water
- Urban Water Corporation: Barwon Water

- Port Philip and Westernport Catchment Management Authority (PPW CMA)

Responses back from the above agencies identified issues related to native vegetation impacts, visual amenity, bushfire hazards and compliance, impacts to bird species and setbacks from waterways.

These responses have been recorded and addressed as part of this application. Please refer to the Stakeholder Engagement Outcomes Report prepared by Urbis (September 2022) at Appendix G for further details regarding responses from the engagement process and responding procedures to manage and mitigate.

Table 2 Stakeholder Engagement Summary Table

Stakeholder	**Engagement Type**	Methods
Relevant agencies Department of Environment, Land, Water and Planning Country Fire Authority (CFA) Environment Protection Authority Department of Transport Emergency Management Victoria Catchment and environmental protection Rural water corporations: Southern Rural Water Urban Water Corporation: Barwon Water Port Philip and Western Port Catchment Management Authority	**Consult:** Obtain feedback on the proposal and understand how the proposal may impact each agencies' service.	Phone Direct emails Virtual meetings Elgin Energy held meetings with DELWP to discuss the project in June 2021, 21 January 2022, 23 January 2022 and via various emails and phone calls up to 12 September 2022. Letters/Emails were sent to CFA, and the CMAs in January and February 2022. Discussions also held with CFA in March 2022.
Landowners and land users Traditional Custodians RAP Groups	**Consult:** Obtain feedback on the proposal by providing balanced and objective information to assist in understanding the proposal's impacts and benefits.	Virtual Meetings Face to Face meetings Email
Community, landowners and land users, including: Existing land occupiers Direct neighbours	**Involve:** Working directly with near neighbours throughout the planning process to ensure all concerns and aspirations and continually understood and considered by Elgin Energy.	Face to face meetings Virtual meetings Community newsletter Direct emails Phone calls Community information drop in sessions
Broader community, specifically:	**Consult:** Obtain feedback on the proposal as they may be interested in visual impact, traffic	Community newsletter Community information drop in sessions

All the people who live within the Little River postcode area (postcode: 3211) All the people who live within the Balliang postcode area (postcode: 3340).	associated with construction, environmental impacts.	
Environmental groups / organisations: Brisbane Rangers Landcare Group Little River Community Landcare group Mt Rothwell Interpretation Centre	**Consult:** Consult: Obtain feedback on the proposal.	Face to face meetings Direct emails Phone calls Community information drop in sessions
Businesses / organisations located in the Town of Little River, specifically: Little River Mechanics Institute Hall Charitable Society Little River General Store (Ampol & Post Office) Rothwell Run XLB Group Pty	**Consult:** Obtain feedback on the proposal as they may be interested in visual impact, traffic associated with construction, environmental impacts.	Direct email Community newsletter Community information drop in sessions
Local schools: Little River Primary School	**Consult**: Consult: Obtain feedback on the proposal.	Community newsletter Community information drop-in sessions
Community groups Town of Little River – Facebook page Lions Club of Little River Little River Historical Society	**Consult:** Consult: Obtain feedback on the proposal.	Direct email Community newsletter Community information drop in sessions

5. PLANNING FRAMEWORK

The following section outlines the planning controls applying to the site as well as planning policies which are relevant to the proposal which need to be considered in the planning assessment of the application. These include the State and Local Policy Frameworks. A summary of relevant legislation and planning permit triggers is also provided.

5.1. PLANNING CONTROLS

The site is subject to:

- Farming Zone
- Environmental Significance Overlay, Schedule 4 (ESO4) and Schedule 1 (ESO1)
- Significant Landscape Overlay - Schedule 1 (SLO1)
- Bushfire Management Overlay (BMO)

An overview of the zone and overlay provisions that apply to the site is set out below.

5.1.1. Farming Zone

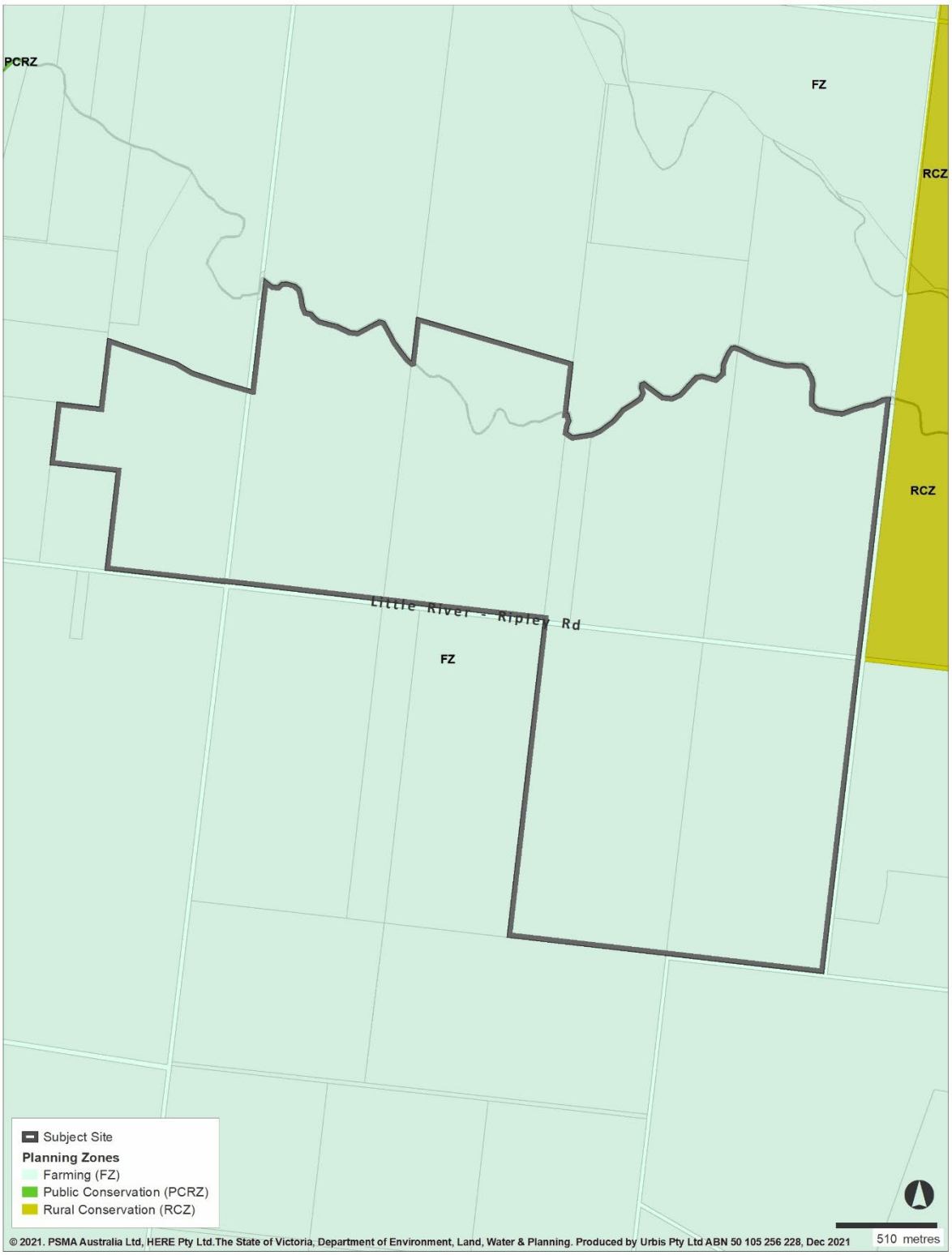
The site is located in the Farming Zone (Clause 35.07) (See Figure 13), the relevant purposes of which are:

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

Pursuant to the Farming Zone:

- A permit is required for the use of land for a Renewable energy facility.
- A permit is required for building or works associated with a use in Section 2 - Renewable energy facility.

Figure 13 Zoning Map



Source: Urbis 2022

5.1.2. Environmental Significance Overlay, Schedule 4 and Schedule 1 (ESO4 and ESO1)

The site is located in the Environmental Significance Overlay (Schedule 4) (See Figure 14), the relevant purposes of which are:

- *To identify areas where the development of land may be affected by environmental constraints.*
- *To ensure that development is compatible with identified environmental values.*

Schedule 4 to the Environmental Significance Overlay relates specifically to the Grasslands within the Werribee plains hinterland. Werribee plains hinterland contain some large areas of predominantly native vegetation as well as some high quality wetlands, which are important for many threatened fauna species. The major issue for biodiversity conservation in the Werribee plains hinterland is loss of native vegetation and habitat through clearing for urban development, cropping and infrastructure.

Pursuant to the Environmental Significance Overlay Schedule 4 and Schedule 1:

- *A permit is required to construct a building or construct or carry out works*
- *Remove, destroy or lop native vegetation.*

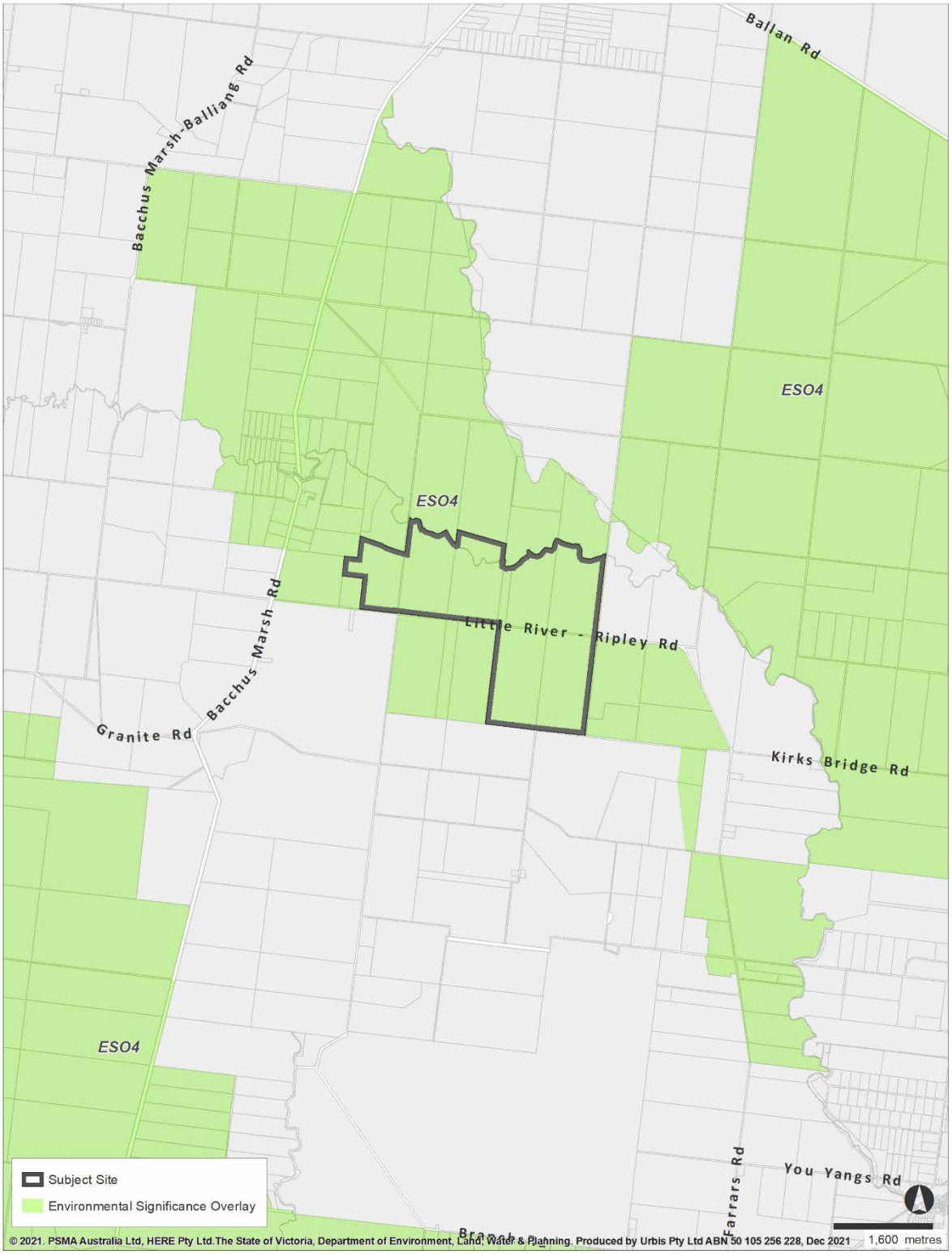
1150-1190 Little River - Ripley Road Little River is located in Schedule 1 to the Environmental Significance Overlay.

Schedule 1 to the Environmental Significance Overlay (See Figure 15) relates specifically to *areas of flora and fauna habitat and of geological and natural interest*. Many of these sites contain remnant vegetation, marsh flats, bird and wildlife habitats and corridors, natural scrub heathland vegetation, and river and streamside corridor.

Pursuant to the Environmental Significance Overlay Schedule 1*:*

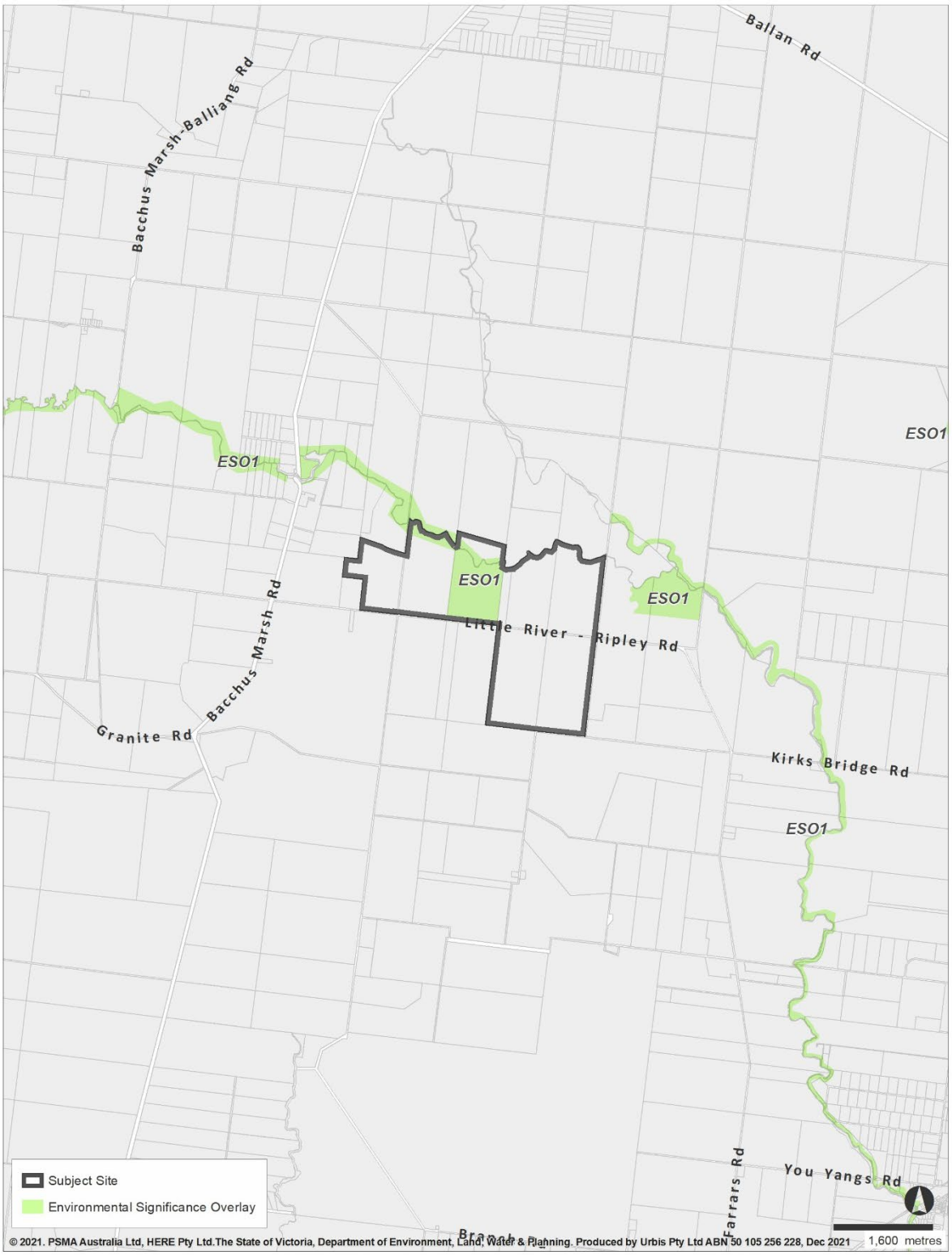
- A permit is required for a fence which is greater than 1.2 metres in height.

Figure 14 ESO4 Map



Source: Urbis 2022

Figure 15 ESO 1 Map



Source: Urbis 2022

5.1.3. Significant Landscape Overlay - Schedule 1 (SLO1)

1085 -1135 and 1145-1215 Ripley Road, Little River are partly located in the Significant Landscape Overlay, Schedule 1 (See Figure 16), the relevant purposes of which are:

- To identify areas where the development of land may be affected by environmental constraints.
- To ensure that development is compatible with identified environmental values.

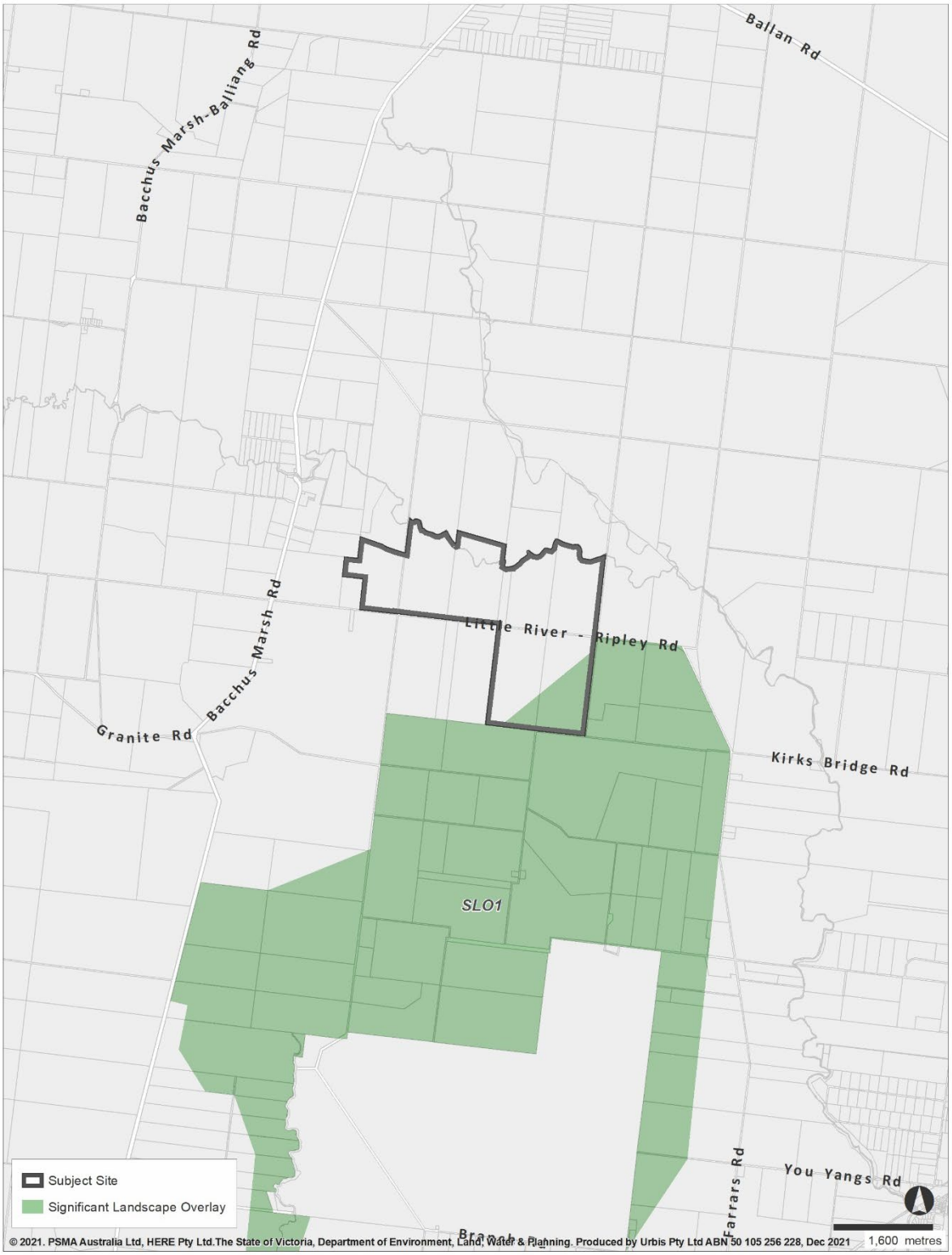
Schedule 1 to the Significant Landscape Overlay relates specifically to the Foothills of the You Yangs. This area is comprised of treeless foothills and plains at the base of the You Yangs. The surrounding foothills and plains create an open view path to the You Yangs, visually exposing them when viewed from the surrounding basalt plains.

The key element of the landscape is it's open character and contrast with the You Yangs.

Pursuant to the Significant Landscape Overlay and Schedule 1:

- A permit is required to construct a building or construct or carry out works.
- A permit is required to remove, destroy or lop any vegetation, except:
  - Where listed within the incorporated document *Environmental Weeds*, City of Greater Geelong, September 2008;
  - Exotic and native vegetation if within 10 metres of a dwelling on a lot exceeding 0.4 hectares; and
  - Any vegetation which is dead.

Figure 16 Significant Landscape Overlay Map



Source: Urbis 2022

5.1.4. Bushfire Management Overlay (BMO)

1085 -1135 Ripley Road, Little River is also partly located in the Bush Fire Management Overlay (See Figure 17), the relevant purposes of which are:

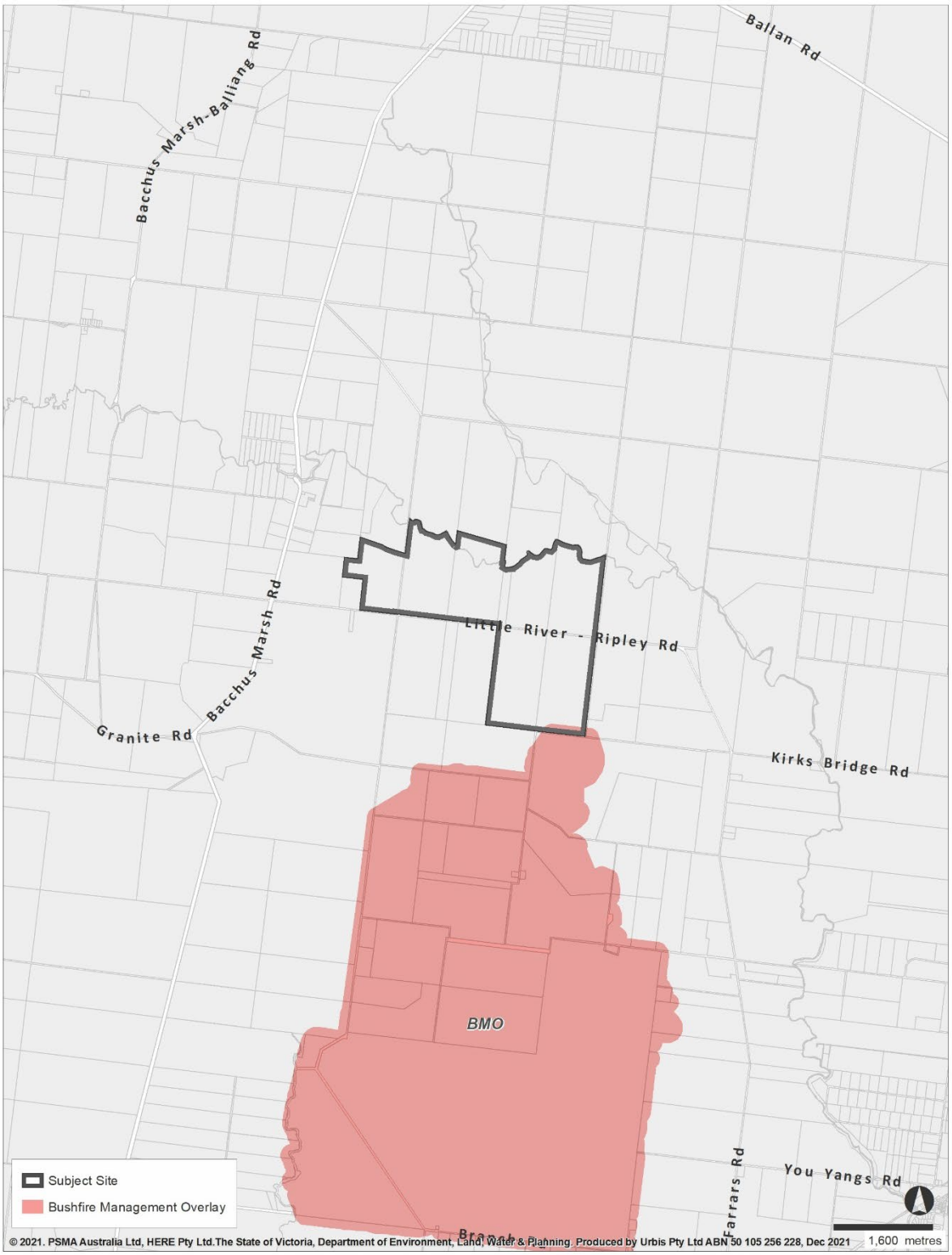
- To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.
- To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.
- To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

Pursuant to the Bush Fire Management Overlay:

- A permit is required to construct a building or construct or carry out works associated with uses specified under Clause 44.06-2.

If the Bushfire Management Overlay only applies to part of a lot, development that is sited outside the Bushfire Management Overlay does not require planning permission (*2017. Planning Permit Applications Bushfire Management Overlay Technical Guide. Department of Environment, Land, Water and Planning).*

Figure 17 Bush Fire Management Overlay



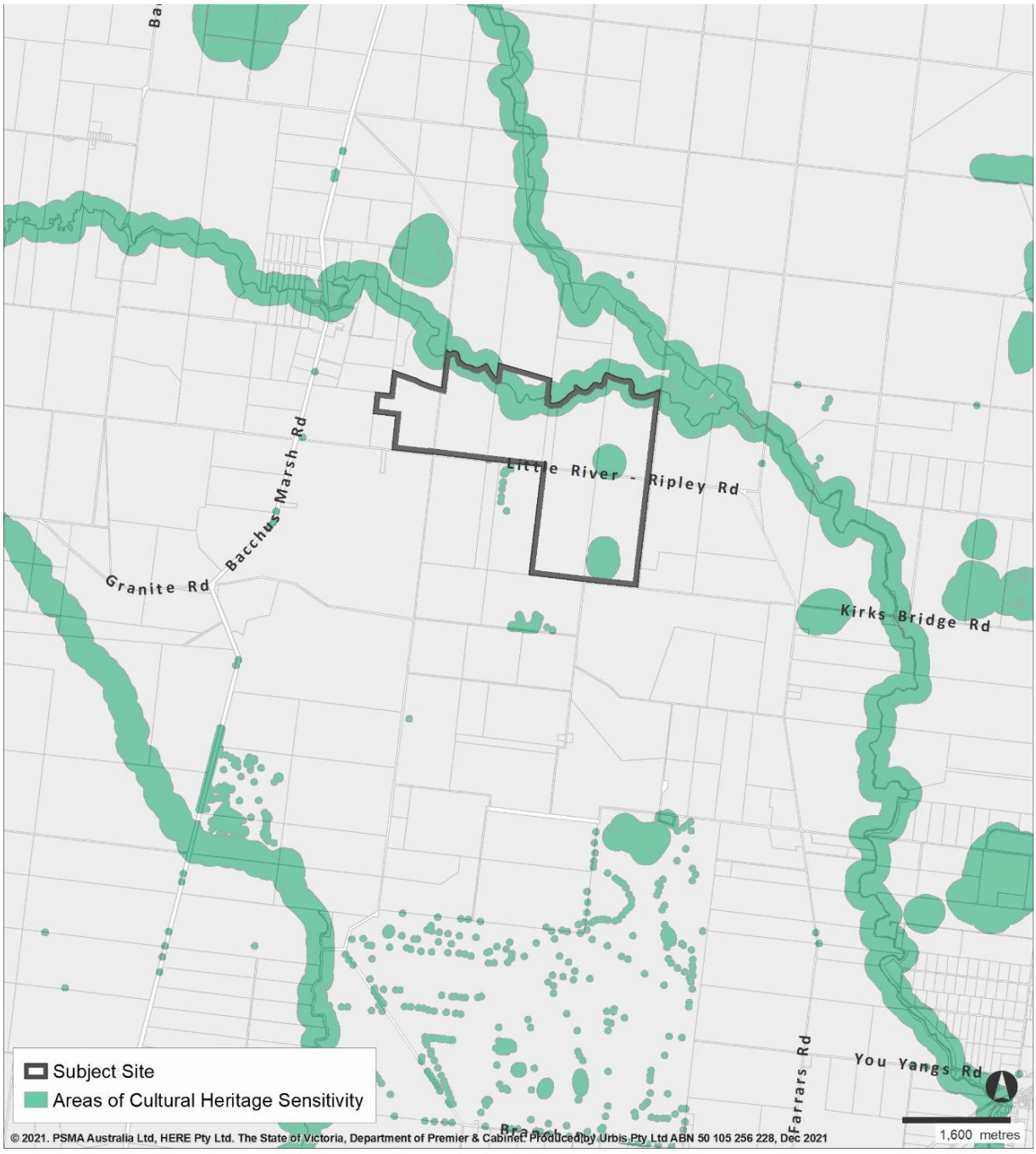
Source: Urbis 2022

5.1.5. Areas of Aboriginal Cultural Heritage Sensitivity

The site is located in an Area of Cultural Heritage Sensitivity (See Figure 18). These areas are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places and land form types that are generally regarded as more likely to contain Aboriginal cultural heritage.

Under the *Aboriginal Heritage Act 2006*, where a cultural heritage management plan is required, planning permits, licences and work authorities cannot be issued unless the cultural heritage management plan has been approved for the activity.

Figure 18 Areas of Cultural Heritage Sensitivity



URBIS

LITTLE RIVER PROPOSED SOLAR FARM SITE
AREA OF CULTURAL HERITAGE SENSITIVITY

Source: Urbis 2022

5.2. STATE PLANNING POLICY FRAMEWORK

The Victoria Planning Provisions (VPP) seeks to develop objectives for Planning in Victoria to foster land use, development planning and policy which integrate relevant environmental, social and economic factors.

The sections of the VPP which are relevant to this application include:

- Clause 11 Settlement
  - 11.01 – Victoria
  - 11.01-1S – Settlement
  - 11.02-1S – Supply of urban land
  - 11.02-2S – Structure planning;
- Clause 12 Environmental and Landscape Values
  - 12.01-1S – Protection of biodiversity
  - 12.01-2S – Native vegetation management
  - 12.03-1S – River corridors, waterways, lakes and wetlands
  - 12.05-2S – Landscapes;
- Clause 13 Environmental Risks and Amenity
  - 13.01-1S – Natural hazards and climate change
  - 13.02-1S – Bushfire planning
  - 13.04-2S – Erosion and landslip
  - 13.04-3S – Salinity
  - 13.05-1S – Noise Management
- Clause 14 Natural Resource Management
  - 14.01-1S – Protection of agricultural land
  - 14.01-2S – Sustainable agricultural land use;
- Clause 15 Built Environment and Heritage
  - 15.03-2S – Aboriginal Cultural Heritage;
- Clause 17 Economic Development
  - 17.01-1S – Diversified economy; and
- Clause 19 Infrastructure
  - 19.01-1S – Energy supply
  - 19.01-2S – Renewable energy.

5.2.1. Clause 11.01 – Victoria

Clause 11.01-1S – Settlement

The objective of this clause is to:

"*Facilitate the sustainable growth and development of Victoria and deliver choice and opportunity for all Victorians through a network of settlements*."

Key strategies in relation to this development are to:

- *Ensure regions and their settlements are planned in accordance with their relevant regional growth plan.*
- *Deliver networks of high-quality integrated settlements that have a strong identity and sense of place, are prosperous and are sustainable by:*
- *Building on strengths and capabilities of each region across Victoria to respond sustainably to population growth and changing environments; and*
- *Contributing to net zero greenhouse gas emissions through renewable energy infrastructure and energy efficient urban layout and urban design.*

This has relevance to the *G21 Regional Growth Plan* (Geelong Region Alliance, 2013). The G21 Regional Growth Plan guides high level land use and development, identifies regional infrastructure and project priorities, and analyses the region's provision for growth in terms of employment, housing and land supply. A key strategy of growth plan is to identify major infrastructure required to support new and growing regions, specifically the provision of energy infrastructure.

Planning Scheme Amendment VC216 introduced strategies to the Greater Geelong Planning Scheme in Clause 11.01-1S to contribute to net zero emission outcomes. The proposal will provide approximately 330MWp of renewable energy along with a Battery Energy Storage System (BESS) of up to 500 MW (approx) and will combat the impacts of climate change, while supporting liveable settlements within regional Victoria. The development will also facilitate a valuable economic boost to the regional construction and employment industries proximate to the Barwon Solar Farm.

5.2.2. Clause 11.02 – Managing Growth

11.02-1S – Supply of urban land

The objective of this clause is to:

"Ensure a sufficient supply of land is available for residential, commercial, retail, industrial, recreational, institutional and other community uses."

The relevant strategies of this clause are to:

- *Ensure the ongoing provision of land and supporting infrastructure to support sustainable urban development.*
- *Maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry.*

11.02-2S – Structure planning

The objective of this clause is to:

"Facilitate the fair, orderly, economic and sustainable use and development of urban areas."

The relevant strategy of this clause is to:

- *Encourage renewable energy generation, storage and distribution.*

Currently, the site is used as agricultural land(cropping and grazing), although the land is considered neither highly productive nor versatile. There are no perceived impacts to the surrounding farm business or significant impacts to the agricultural amenity of the region. The proposal will seek to maintain grazing onsite and will therefore agricultural productivity will be reduced, rather than lost.

Planning Scheme Amendment VC216 includes strategies in Clause 11.02-2S to contribute to net zero emission outcomes and support metropolitan and regional climate change strategies. This project is consistent with this clause in providing renewable energy, storage and distribution in an area of the grid that has high system strength and high MLF (marginal Loss Factor) and able to boost the States renewable energy production in close proximity to major population centres (Melbourne and Geelong).

5.2.3. Clause 12.01 – Biodiversity

Clause 12.01-1S – Protection of Biodiversity

The objective of this clause is to:

"Protect and enhance Victoria's biodiversity."

Key strategies relevant to the proposed development are:

- *Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*

– Cumulative impacts.

– Fragmentation of habitat.

– *The spread of pest plants, animals and pathogens into natural ecosystems.*

- *Support land use and development that contributes to protecting and enhancing habitat for indigenous plants and animals in urban areas.*

Elgin Energy engaged the services of Biosis to produce a Flora and Fauna Assessment (February 2023) to assess the existing environmental values of the site and provide recommendations in relation to biodiversity. The Victorian Volcanic Plains bioregion encompasses most of the site area, with only the south-eastern corner passing through the Central Victorian Upland bioregion. The site area is within the management region of the Port Phillip and Westernport Catchment Management Authority (CMA). The site supports five modelled ecological vegetation classes, including:

- Plains Grassy Wetlands EVC 125
- Plains Grassland EVC 132
- Plains Grassy Woodland EVC 55
- Creekline Grassy Woodland EVC 68
- Hills Herb-rich Woodland EVC 71
- The study area also contains areas of:
- Planted native vegetation,
- Exotic grassland, compromising of currently cropped land, previously cropped land and pasture, with some areas containing scattered native grasses and trees, and
- Constructed wetland that supports small amounts of native vegetation.

A detailed Flora & Fauna Assessment has been prepared by Biosis and is contained at Appendix H of this report.

We note, not all plains grassland would be lost due to a solar farm development due to the method of solar panel construction. Vegetation losses contained in the Flora and Fauna Assessment produced by Biosis (February 2023) (detailed at Appendix H) are considered to be higher than what would actually be lost upon construction. This should be considered when balancing the net losses of native vegetation from the site. Installation of the panels does not require complete ground disturbance (ie scalping of the surface). Panels are installed on posts, with a relatively small direct disturbance footprint. Other disturbance due to machinery access will be temporary in nature. There is a growing body of evidence from other solar projects that the partial shading caused by solar panels does not completely kill grassland species, and it is possible that some elements of the grassland (ie. Native grass species), may survive into the long term.

A Biodiversity Assessment Report undertaken by NGH Environmental for Wellington Solar Farm (November 2017) highlights that biodiversity can thrive under solar panels, providing a discussion on how grasslands may respond to the installation and operation of solar panels. This study has been included at Appendix P of this report for further reference. A review of this Assessment by Umwelt identifies that the research provides a generalised approach for accounting for different types of impacts in vegetation zones. The review outlines that certain vegetation zones (for example, Plains Grass Grassland) in areas adjoining and between panels, *native species diversity will remain at or above the benchmark values prior to and after development*. We believe this study is relevant to the proposal, particularly when considering the total net loss of Plains Grassland and management strategies to maintain and strengthen the biodiversity of the area.

There have been other studies undertaken nationally and internationally that look at how solar panels in utility sized projects interact with native flora and fauna species.

Some of these studies specifically looked at the impacts of solar on Plains Grassland including Golden Sun Moth habitat. They broadly agree that solar farms can also provide opportunities to enhance habitats for species of fauna such as the Golden Sun Moth habitat by creating new habitat or restoring degraded habitat, increasing the availability of food and nectar sources, and reducing the impact of other threats such as fire, grazing, and predation. This is especially true of this site, where the existing farming practices on the site have led to a degradation of the land which will worsen over time with the current land use (noted by the serrated tussock across much of the site). Solar panels are a passive low impact use, that do not require large foundations. This means that the land will be able to rehabilitate over the next 40 years, providing opportunities for the quality of plains grassland to improve and for other species of flora and fauna to adapt and flourish. Examples of such studies can be provided if required.

Furthermore, the site will be actively managed in terms of weed management, allowing qualified specialist to oversee the restoration of native habitats for the lifetime of the project, resulting in a net nature positive outcome for the site which would otherwise not occur under the existing use. Given the site has been designed around the site constraints to the minimum footprint, it can achieve and maintain economic viability.

We believe an extremely robust design approach consistent with the avoidance and minimisation guidelines for native vegetation conservation has been demonstrated. Clause 12.01-2S – Native Vegetation Management

The objective of this clause is to:

"Ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation."

The strategy to implement this policy is 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 (Department of Environment, Land, Water and Planning, 2017):

1. *Avoid the removal, destruction or lopping of native vegetation.*
2. *Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
3. *Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.*

Elgin Energy engaged the services of Ag-Challenge Consulting to produce an Agricultural Assessment (March 2022) which details that much of the original indigenous vegetation has been removed over the years, with some mature Eucalypts remaining, scattered sporadically though some land parcels, watercourses and around the southern extremity of the project site. The results of the Agricultural Assessment prepared by Ag-Challenge Consulting are contained in detail within Appendix J of this report.

A Flora and Fauna Assessment produced by Biosis (February, 2023) outlines offset requirements for internal testing of a site-relevant proposal to remove native vegetation. An assessment of this report is detailed at Appendix H.

In summary the removal of native vegetation is restricted to what is reasonably necessary to achieve the minimum size project to make the development economically viable. As discussed in Section 3 of this report, the proposed site layout avoids major removal of native vegetation on site whilst balancing amenity impacts to neighbouring properties and impacts to cultural heritage.

Offsets commensurate with the net loss of biodiversity as a result of the removal of native vegetation include a large conservation area either side of Sandy Creek to allow the relocation of trees for creation of habitat onsite and the limited removal of poor-quality patch vegetation, historically impacted by farming practices.

Further discussion of these offsets and impacts to the existing biodiversity of the area are discussed in section 8.3 of this report.

An assessment of the proposal against Clause 12.01-2S is also detailed at section 5.2.3 of this report.

5.2.4. Clause 12.03 – Water Bodies and Wetlands

Clause 12.03-1S – River corridors, waterways, lakes and wetlands

The objective of this clause is to:

"To protect and enhance river corridors, waterways, lakes and wetlands."

The relevant strategies of this clause are to:

- *Protect the environmental, cultural and landscape values of all water bodies and wetlands.*
- *Ensure development responds to and respects the significant environmental, conservation, cultural, aesthetic, open space, recreation and tourism assets of water bodies and wetlands.*
- *Ensure development is sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands.*
- *Ensure development does not compromise bank stability, increase erosion or impact on a water body or wetland's natural capacity to manage flood flow.*

The site's northern boundary along Little River and Sandy Creek has a proposed setback of minimum 50 metres, which is increased in several locations to avoid important areas of Aboriginal Cultural Heritage. Refer to section 3.2.1 of this report for more details regarding the setback of these areas.

Urbis on behalf of Elgin Energy engaged Ecological Australia to produce a Hydrology Assessment (September 2022) for the site. This assessment outlines that based on the installation of the solar panels above the natural ground surface, soil type and quality, overflow paths, depths of the land and appropriate siting of relevant infrastructure, the Barwon Solar Farm is unlikely to affect flood levels or downstream discharge. The BESS infrastructure will be raised to minimise any potential for flooding impacts to the area. The Hydrology Assessment (September 2022) can be found in detail at Appendix K of this report.

Two patches of Wetland were mapped associated with the constructed dam in the south-east section of the study area. No development is proposed in these areas.

Management of these wetlands during construction will be addressed in a Construction Management plan and Environmental management plan to ensure there are no unintentional impacts to the wetlands away from the development areas including ensuring the wetlands are not drained or adversely affected as a result of the development.

5.2.5. Clause 12.05 – Significant Environments and Landscapes

Clause 12.05-2S – Landscapes

The objective of this Clause is to:

"Protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments."

The relevant strategies for this clause are to:

- *Ensure development does not detract from the natural qualities of significant landscape areas.*
- *Improve the landscape qualities, open space linkages and environmental performance in significant landscapes and open spaces, including green wedges, conservation areas and non-urban areas.*
- *Recognise the natural landscape for its aesthetic value and as a fully functioning system.*
- *Ensure important natural features are protected and enhanced.*

The following relate to the proposed development in relation to Clause 12.05-2S:

- The site is located in an Environmental Significance Overlay (ESO) and a Significant Landscape Overlay (SLO).
- ESO1 seeks to conserve areas of flora and fauna habitat and of geological and natural interest.

- ESO4 applies to the grasslands within the Werribee Plains Hinterland and seeks to enhance the environmental and landscape values of the area, avoid fragmentation, and conserve habitats and environments.
- SLO1 applies to the foothills of the You Yangs, and seeks to encourage landscape retention, and the retention of vegetation buffer strip around watercourses, roads, property boundaries and remnant indigenous vegetation species.

An assessment of the proposal against this clause can be found at section 7.4 of this report.

5.2.6. Clause 13.01 – Climate Change Impacts

Clause 13.01-1S – Natural hazards and Climate Change

The objective of this clause is to:

"Minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning."

The relevant strategies of this clause are to:

- *Respond to the risks associated with climate change in planning and management decision making processes.*

The development will contribute significantly to Victoria's renewable energy generation targets (50% by 2030) and the reduction of greenhouse gas emissions (legislated to achieve net zero by 2050), with the project able to generate enough electricity to power the equivalent of approximately 98,000 homes through a reduction of 400,000 tonnes of Co2 emissions (the amount required to power those homes via fossil fuels). As mentioned in section 3.2.8 of this report, the project will connect to the grid via the existing Geelong Terminal to Keilor Terminal 220 kV powerline. The strength of the grid at this location, along with the fact that it will be operational prior to 2030, will respond to the objective to minimise the impacts of climate change and its associated natural hazards. Planning Scheme Amendment VC216 introduced Clause 13.01-1S to the Greater Geelong Planning Scheme to add consideration of climate change.

5.2.7. Clause 13.02 – Bushfire

Clause 13.02-1S – Bushfire planning

This policy must be applied to all planning and decision making under the *Planning and Environment Act 1987* relating to land that is within a designated bushfire prone area or is subject to a Bushfire Management Overlay. The proposed development is partly located in the Bushfire Management Overlay, as shown in the planning scheme, specifically at 1085-1135 Ripley Road, therefore risk needs to be addressed.

The objective of this clause is to:

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

The strategies associated with this clause include:

- *Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*
- *Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.*

The Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA, 2019) provides standard considerations and measures in relation to the design, construction and operation of new renewable energy facilities. Fire safety, risk and emergency management must be considered in the proposal of a solar farm. There are no site-specific guidelines for this proposal.

The overall bushfire risk to the site is considered low, given the background hazard context and landscape risk profile, its siting, construction, design and mitigation strategies. In addition, the solar farm is not expected to result in a noticeable increase in fire risk in the locality and to downwind assets and values. The facility is considered to be appropriate within the identified low risk fire environment, and mitigation strategies

proposed are compliant with the CFA Design Guideline requirements. An assessment of the proposal against this clause, including the CFA Design Guidelines, is detailed at section 7.5.2 of this report. A copy of the Fire Risk Assessment (Ecological Australia, September 2022) is detailed at Appendix O of this report.

5.2.8. Clause 13.04 – Soil Degradation

Clause 13.04-1S – Salinity

The objective of this clause is to:

"*Minimise the impact of salinity and rising water tables on land uses, buildings and infrastructure in rural and urban areas and areas of environmental significance and reduce salt load in rivers*."

- The relevant strategies of this clause are to:
- *Identify areas subject to salinity in the preparation of planning schemes and land use planning decisions.*
- *Promote vegetation retention and replanting in aquifer recharge areas contributing to groundwater salinity problems.*
- *Prevent inappropriate development in areas affected by groundwater salinity.*

Clause 13.04-2S – Erosion and landslip

The objective of this clause is to:

"Protect areas prone to erosion, landslip and other land degradation processes."

The strategies of this clause are to:

- *Identify areas subject to erosion or instability in planning schemes and when considering the use and development of land.*
- *Prevent inappropriate development in unstable areas or areas prone to erosion.*
- *Promote vegetation retention, planting and rehabilitation in areas prone to erosion and land instability.*

The Agricultural Assessment undertaken by Ag-Challenge Consulting (March 2022) indicates the concentration of runoff from the panels onto the soil surface may initiate soil erosion. Although, the Hydrology Assessment produced by Ecological Australia (September 2022) identifies that velocities across the site tend to be low and below the threshold where rock armouring to protect waterways and features is required. Should erosion occur, mitigation strategies will be implemented.

The results of the Agricultural Assessment are contained in detail within Appendix J of this report. The Hydrology Assessment is contained in Appendix K of this report.

5.2.9. Clause 13.05 – Noise

Clause 13.05-1S – Noise Management

The objective of this clause is to:

"Assist the management of noise effects on sensitive land uses."

The strategies of this clause are to:

- *Ensure that development is not prejudiced and community amenity and human health is not adversely impacted by noise emissions.*
- *Minimise the impact on human health from noise exposure to occupants of sensitive land uses (residential use, child care centre, school, education centre, residential aged care centre or hospital) near the transport system and other noise emission sources through suitable building siting and design (including orientation and internal layout), urban design and land use separation techniques as appropriate to the land use functions and character of the area.*

Urbis engaged the services of Norman Disney & Young (NDY) to provide an Acoustic Report outlining the acoustic assessment (February 2023) for the proposed solar farm against the requirements of the Noise from Industry in Regional Victoria (NIRV) guidelines. The report concludes that following a noise emission assessment, the proposal is compliant with NIRV limits and thus will not adversely impact community amenity and human health. Recommendations for treatment to protect potential impacts have also been provided and considered in the design of the solar farm.

The results of the Acoustic Assessment are contained within Appendix M of this report.

5.2.10. Clause 14.01 – Agriculture

Clause 14.01-1S – Protection of agricultural land

The objective of this clause is to:

"Protect the state's agricultural base by preserving productive farmland."

The relevant strategies of this clause are to:

- *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.*
- *Identify areas of productive agricultural land by consulting with the Department of Economic Development, Jobs, Transport and Resources and using available information.*
- *In considering a proposal to use, subdivide or develop agricultural land, consider the:*
  - *Desirability and impacts of removing the land from primary production, given its agricultural productivity.*
  - *Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.*
  - *Compatibility between the proposed or likely development and the existing use of the surrounding land.*
  - *The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.*
  - *Land capability.*
  - *Avoid the subdivision of productive agricultural land from diminishing the long-term productive capacity of the land.*
  - *Give priority to the re-structure of inappropriate subdivisions where they exist on productive agricultural land.*
  - *Balance the potential off-site effects of a use or development proposal (such as degradation of soil or water quality and land salinisation) against the benefits of the proposal.*

An Agricultural Assessment prepared by Ag-Challenge Consulting (March 2022) detailing the construction and operation of the proposed Barwon Solar Farm indicates the land is not considered to be significant or strategically important land from an agricultural perspective and is neither highly productive nor highly versatile. The assessment of agricultural values of each attribute group adapted from the Design and Development Overlay (2019) includes:

- Soils and landscape

- Water and climate
- Impact of fragmentation
- Impact of change of land use
- Specific planning protection for agricultural values
- Government investment, and
- Co-location of solar energy facility with agriculture.

None of the land fits within the criteria to consider it of high agricultural value. With dry and hot summers and low to moderate annual rainfall, the proposed Barwon Solar Farm will utilise these valuable climate conditions to properly utilise the site's potential.

The Assessment outlines that the potential impacts to the agricultural amenity of the region or surrounding farm businesses are not significant. While cropping may no longer be practical with the development of a solar energy facility, with appropriate panel design, sheep may still be able to graze the land, thus retaining some of the current level of agricultural productivity. Therefore, agricultural productivity will be reduced, rather than lost.

The results of the Agricultural Assessment are contained in detail within Appendix J of this report.

Clause 14.01-2S – Sustainable agricultural land use

The objective of this clause is to:

"To encourage sustainable agricultural land use."

The relevant strategies for this clause are to:

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

The use of land for a renewable energy facility (solar farm) encourages sustainable land use. As mentioned earlier, the Biodiversity Assessment produced for Wellington Solar Farm (contained at Appendix P) outlines that biodiversity will be significantly maintained under solar panels. The site taken out of active crop production with this enhanced biodiversity will create a more productive and fertile land at the end of the solar farms life than exiting conditions. Grazing of sheep will continue to occur across areas of the site keeping it in agricultural use. Elgin Energy has proposed to enter a lease with an existing farmer to continue to graze sheep on the property.

5.2.11. Clause 15.03 – Heritage

Clause 15.03-2S – Aboriginal cultural heritage

The objective of this clause is to:

"Ensure the protection and conservation of places of Aboriginal cultural heritage significance."

The strategies for this clause are to:

- *Identify, assess and document places of Aboriginal cultural heritage significance, in consultation with relevant Registered Aboriginal Parties, as a basis for their inclusion in the planning scheme.*
- *Provide for the protection and conservation of pre-contact and post-contact Aboriginal cultural heritage places.*
- *Ensure that permit approvals align with the recommendations of any relevant Cultural Heritage Management Plan approved under the Aboriginal Heritage Act 2006.*

The findings and recommendations of the Aboriginal Heritage Council and the Victorian Heritage Council for post-contact Aboriginal heritage places should be considered as relevant.

The relevant Traditional Owners Group (TOG) or registered Aboriginal Party (RAP) is the Wadawurrung Traditional Owner Aboriginal Corporation (WTOAC).

Elgin Energy engaged the services of Eco Logical Australia to produce a Cultural Heritage Management Plan (CHMP number 18474) in compliance with the *Aboriginal Heritage Regulations 2018.* Regulation 7 states that a CHMP is required for all or part of the activity area, for the activity is an area of cultural heritage sensitivity, and all of part of the activity is a high impact activity. See section 6.4 of this report for an assessment against the planning scheme and details of the CHMP process which is running in parallel with the planning permit process.

5.2.12. Clause 17 – Economic Development

The purpose of this policy states:

- *Planning is to provide for a strong and innovative economy, where all sectors are critical to economic prosperity.*
- *Planning is to contribute to the economic wellbeing of the state and foster economic growth by providing land, facilitating decisions and resolving land use conflicts, so that each region may build on its strengths and achieve its economic potential.*

Clause 17.01-1S – Diversified economy

The objective of this clause is to:

"Strengthen and diversify the economy."

The relevant strategies of this clause are to:

- *Facilitate regional, cross-border and inter-regional relationships to harness emerging economic opportunities.*
- *Facilitate growth in a range of employment sectors, including health, education, retail, tourism, knowledge industries and professional and technical services based on the emerging and existing strengths of each region.*
- *Support rural economies to grow and diversify.*

The development is consistent with the G21 Regional Growth Plan as the region has an increasingly diversified economy with traditional strengths in agriculture, manufacturing, construction and tourism. A move away from heavy manufacturing to more advanced processes such as renewable energy facilities (solar farm) will provide diversification and growth to the local agricultural economy. The proposed development will continue to support the local agricultural use (sheep grazing) and provide a means for the land to remain productive without compromising its long term agricultural viability, to which it will return upon potential decommissioning of the solar farm.

Costs of the project total over approximately $600 million, and much of this will be created within the Victorian economy through job creation, such as builders, contractors, materials and services required for the installation and running of the solar farm. The project will assist in the creation of approximately 150 jobs during construction and 3 during operation, supporting the rural economy and providing employment opportunities to local workers.

5.2.13. Clause 19.01 – Energy

Planning should minimise the impact of use and development on the operation of major infrastructure of national, state and regional significance, including communication networks and energy generation and distribution systems. Infrastructure planning should avoid, minimise and offset environmental impacts, and incorporate resilience to natural hazards, including future climate change risks.

Clause 19.01-1S – Energy supply

The objective of this clause is to:

"Facilitate appropriate development of energy supply infrastructure."

The strategies of this clause are to:

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

Clause 19.01-2S – Renewable energy

The objective of this clause is to:

"Support the provision and use of renewable energy in a manner that ensures appropriate siting and design considerations are met."

The relevant strategies of this clause are to:

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

The proposal aligns with the clauses for energy supply and renewable energy as it will reduce the impacts of climate change while providing broader economic, social and environmental benefits to the broader community and environment. The proposal will be one of Victoria's largest solar farm sites and will contribute approximately 330MWp of affordable green power to both Geelong and Melbourne. The generation of energy to power of approximately 98,000 homes annually will meet community demand for clean energy services and improve sustainability outcomes on a micro and macro scale.

Planning Scheme Amendment VC160 (gazetted on January 24, 2020) amended this clause to update references to the revised Policy and *Planning Guidelines for Development of Wind Energy Facilities in Victoria* (Department of Environment, Land, Water and Planning, March 2019). Additionally, Amendment VC161 (gazetted on September 17, 2019) updated this clause to specify the *Solar Energy Facilities Design and Development Guideline* (Department of Environment, Land, Water and Planning, August 2019) as a policy document.

Planning Scheme Amendment VC216 changed the Greater Geelong Planning Scheme by including strategies in Clause 19 (Infrastructure) to include planning policy relating to minimising environmental impacts and increasing resilience to climate change risks. Clause 19.01-1S introduced a new strategy to support the resilience of energy infrastructure to impacts from climate change, and modified strategies to better align with Victorian energy policy. Amendment VC221 also supports Clause 19.01-1S in facilitating the appropriate development of energy supply infrastructure.

Refer to section 5.3 of this report for further details regarding planning scheme amendments.

5.3. PLANNING SCHEME AMENDMENTS

5.3.1. Amendment VC157

Amendment VC157, gazetted on March 15, 2019, changed the Victorian Planning Provisions (VPP) and all planning schemes so that a planning permit is required for a power line or substation required to connect an energy generation facility to the electricity network. This does not apply to generators that has planning approval prior to gazettal of the amendment.

5.3.2. Amendment VC159

Amendment VC159, gazetted on August 8, 2019, changed the VPP and all planning schemes to introduce and revise land use terms. This included amending the definition of 'Utility installation' to include transmit, distribute or store power, including battery storage.

5.3.3. Amendment VC160

Amendment VC160, gazetted on January 24, 2020, changed the VPP and all planning schemes to correct errors, omissions, clarify the operation of certain provisions, and implement planning reforms for extractive industries. The Amendment changes:

- Clauses which relate to 'solar energy facility' to replace this term with 'solar energy system' to resolve any potential confusion following the introduction of the solar energy facility requirements in Amendment VC161 (below).
- Clause 19.01-2S (Renewable Energy) to update references to the revised Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (Department of Environment, Land, Water and Planning, March 2019).

5.3.4. Amendment VC161

Amendment VC161, gazetted September 17, 2019, changed the VPP and all planning schemes to introduce new requirements for renewable energy facilities. The Minister for Planning is now the responsible authority for all new renewable energy facilities that are 1 megawatt or greater and associated utility installations. The amendment changes:

- Clause 19.01-2S (Renewable energy) to specify the Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019) as a policy document.
- Clause 53.13 (Renewable energy facility – other than wind energy facility) to clarify the application of the provision and introduce new decision guidelines.

5.3.5. Amendment VC178

The Minister for Planning approved Amendment VC178 on April 9, 2020. The Amendment changed the VPP and the Geelong Planning Scheme by amending Clause 52.13 (2009 Bushfire: Recovery Exemptions) and to correct errors and omissions. The Amendment changes:

- Clause 52.13 (2009 Bushfire: Recovery Exemptions) to replace the cessation of use date (expiry date) of 31 March 2020 with 30 June 2020.
- Clause 54.03-5 and Clause 55.03-5 (Energy efficient protection objectives) to replace references to 'solar energy facility' with 'solar energy system' to distinguish domestic solar generation from the new provisions for commercial solar energy facilities introduced through Amendment VC160.

5.3.6. Amendment VC192

Amendment VC192, gazetted on November 16, 2020, changed the VPP and all planning schemes to make the Minister the responsible authority for all large energy generation facilities and utility installations.

5.3.7. Amendment VC216

The Minister for Planning approved Amendment VC216 to the VPP and all planning schemes in Victoria on June 10, 2022. The Amendment made changes to support Environmentally Sustainable Development (ESD). The relevant amendment changes the VPP and all planning schemes by amending:

- Clause 11.01-1S (Settlement) to include strategies that contribute to net zero emission outcomes;
- Clause 11.02-2S (Structure planning) to include strategies that contribute to net zero emission outcomes and support metropolitan and regional climate change strategies;
- Clause 12.01-1S (Protection of biodiversity) to update the objective, include a new strategy focussed on enhancing biodiversity in urban areas and add a policy guidance document;
- Clause 13.01-1S (Natural hazards and climate change) to add consideration of climate change and health and include new policy guidelines and a policy document;
- Clause 19 (Infrastructure) to include planning policy relating to minimising environmental impacts and increasing resilience to climate change risks;
- Clause 19.01-1S (Energy supply) to introduce a new strategy supporting resilience of energy infrastructure to impacts from climate change, modify strategies to better align with Victorian energy policy, support investment in energy supply infrastructure and include policy documents; and
- Clause 19.01-2S (Renewable energy) to clarify policy intent of the objective and strategies and include additional policy documents.

Amendment VC216 embeds ESD more comprehensively in the PPF (Planning Policy Framework), adding consideration of ESD into relevant planning policy themes and including the consideration of climate change into the purpose of the VPP and all planning schemes. The amendments focus on improving and strengthening how ESD is addressed to better reflect state policies in important areas such as climate change and energy.

Notably, relocating existing Clauses 15.02 (Sustainable development) and 15.02-1S (Energy and resource efficiency) to their most relevant sections in the PPF minimises duplication and ensures that ESD is considered a key aspect of decision-making across the PPF.

5.3.8. Amendment VC221

The Minister for Planning approved Amendment VC221 to the VPP and all planning schemes in Victoria on August 4, 2022. The Amendment made changes by facilitating all-electric developments to support the implementation of Victoria's *Climate Change Strategy 2021* and *Gas Substitution Roadmap 2022*. VC221 amends clauses that require developments to be connected to reticulated gas and amends referral requirements. The amendment specifically supports the following relevant clauses:

- Clause 15 (Built environment and heritage) to support the transition to net zero greenhouse gas emissions; and
- Clause 19.01-1S (Energy supply) which seeks to facilitate appropriate development of energy supply infrastructure.

The Strategy and Roadmap define Victorian government policy which seeks to reduce emissions, transition to clean energy and decarbonise Victoria's economy. The Roadmap prioritises to deliver more all-electric precincts and remove regulatory barriers in 2022 to new developments, which promotes consumer choice about how they can meet their energy requirements.

Determining referral authority requirements and existing planning provisions that require or encourage reticulated gas to be connected where it is readily available limit the opportunity for developers to develop an all-electric development.

Changes to the VPP ensures the VPP facilitates transition towards electrification and supports the Victorian Government's emissions reduction target achievements.

The positive environmental, social, and economic benefits to the amendment include:

- Removing the effective mandate to connect developments to reticulated gas where it is available, providing consumers greater choice about energy sourcing.
- Creation of jobs, attracting investment in technology which supports the transition to renewable energy, and growing the economy.
- Consumers may have the choice to live in all-electric developments and unlock energy efficient and renewable electricity technologies for Victorian energy consumers.
- Help achieve the state's emissions reduction targets.

5.4. LOCAL PLANNING POLICY FRAMEWORK

The sections of the VPP which are relevant to this application include:

- Clause 12.01 Biodiversity
  - 12.01-1L – Protection of biodiversity
- Clause 12.03 Water Bodies and Wetlands
  - 12.03-1L – River corridors, waterways, lakes and wetlands
- Clause 13.04 Soil Degradation
  - 13.04-3L – Salinity
- Clause 14.01 Agriculture
  - 14.01-1L-01 – Discretionary uses in rural areas
  - 14.01-1L-02 – Dwellings and subdivision in farming areas
  - 14.01-2R – Agricultural productivity G21
  - 14.01-2L-01 – Sustainable agricultural land use in Greater Geelong
- Clause 17 Economic Development
  - 17.01-1R – Diversified economy – Geelong G21

5.4.1. Clause 12.01 – Biodiversity

Clause 12.01-1L – Protection of Biodiversity

The strategy of this clause is to:

- *Ensure that land use and development enhances areas of native vegetation and other habitats.*

An examination of the development against this policy is contained in section 5.2.3 and 8.3 of this report of this report.

5.4.2. Clause 12.03 – Water Bodies and Wetlands

Clause 12.03-1L – River corridors, waterways, lakes and wetlands

The strategies of this clause are to:

- *Ensure that land use and development avoids isolating wetlands and provides for connective water flows and vegetative links.*
- *Ensure waterways and wetlands are not drained or adversely affected as a result of development.*

The proposed solar farm is setback from all waterways by a minimum of 50m from Sandy Creek and Little River and 10m from all other second order streams and waterbodies. An examination of the development against Hydrology Impacts is contained in section 8.10 and Appendix K of this report.

5.4.3. Clause 13.04 – Soil Degradation

Clause 13.04-3L – Salinity

The strategy of this clause is to:

- *Discourage land use and development that aggravates existing salinity impacts or leads to the generation of newly affected areas, particularly through rising groundwater levels.*

The proposed Solar Farm does not require any substantial excavation or foundations; therefore, minimal soil impacts are expected.

5.4.4. Clause 14.01 – Agriculture

Clause 14.01-1L-01 Discretionary uses in rural areas

This local planning policy seeks to preserve the productive agricultural capacity of the land and where possible enhance the environmental condition of the land as well as maintain the landscape character of rural areas. The policy states discretionary uses will be supported where:

- *The intensity of the use will complement and support adjoining rural land uses.*
- *Existing agricultural activity on adjoining land will not be compromised.*
- *The scale of the development will complement and respect the rural landscape character.*
- *The site has access to a constructed or sealed road that is capable of accommodating anticipated traffic levels.*
- *The site has access to all necessary servicing infrastructure*

The findings of the Agricultural Assessment produced by Ag-Challenge Consulting (March 2022) notes that there is clearly no identifiable impact from the installation of solar panels on any of the relevant agricultural surrounding farming businesses. Additionally, the removal of areas from grazing and cropping should not results in any negative impacts on the agricultural use of adjacent properties. This assessment is detailed at Appendix J of this report.

Clause 14.01-1L-02 Dwellings and subdivision in farming areas

This policy applies to relevant land in the Farming Zone. The objective of this clause is to:

"Ensure that the development of dwellings and excision of existing dwellings are consistent with the use of land for sustainable rural uses."

The relevant strategy of this clause is to:

- *Support the construction of a dwelling where:*
  - *The dwelling will not result in the property being removed from agricultural production and the primary use of the land will continue to be agriculture.*
  - *Existing agricultural activity on adjoining land will not be compromised.*

It should be considered as relevant:

- Proposed measures to preserve the productive capacity of the land and enhance its environmental condition, including:
  - Addressing pest plants and animals.
  - Managing land erosion.
  - Protecting remnant vegetation through fencing or other methods.
  - Revegetating strategic areas such as between remnant vegetation stands and along waterways.

- The *City of Greater Geelong Rural Land Use Strategy* (Parsons Brinkerhoff, 2007) as a policy document relating to the proposal.

There are no dwellings or subdivision proposed as part of this development.

Clause 14.01-2R – Agricultural productivity G21

The strategy of this clause is to:

- *Support new opportunities in farming.*

Clause 14.01-2L-01 – Sustainable agricultural land use in Greater Geelong

The strategies of this clause are to:

- *Encourage agricultural uses with export potential.*
- *Encourage horticulture activities in the rural areas around Avalon Airport.*

5.4.5. Clause 17 – Economic Development

Clause 17.01-1R – Diversified economy – Geelong G21

The relevant strategies of this clause are to:

- *Build on the region's competitive strengths, including agricultural land resources and economic and natural assets.*

The development is consistent with the G21 Regional Growth Plan and will continue to support the local agricultural use (sheep grazing) whilst providing a means for the land to remain productive without compromising its long-term agricultural viability.

5.5. PARTICULAR PROVISIONS

5.5.1. Clause 52.02 – Easements, Restrictions and Reserves

The purpose of this clause is to:

"Enable the removal and variation of an easement or restrictions to enable a use or development that complies with the planning scheme after the interests of affected people are considered."

There are three easements which bisect the site, including:

- Easement E-1 (Book 864, No. 761 to State Electricity Commission of Victoria) passes through the site to the west of Sandy Creek Road. The electricity transmission line bisects the project site from southwest to northeast.
- Easement E-2 (Book 822, No. 437) is an electricity transmission line which bisects the site from Little River-Ripley Road in the southwest to Little River in the northeast.
- Easement E-3 (Book 655, No. 933) is an electricity transmission line which runs from a Government Road, northeast through Mount Rothwell Road.

The development will not interfere with these easements and is setback from their boundaries.

The relevant Certificate of Titles for this site, including all easements, are detailed at Appendix A of this report. Additionally, a Survey Plan (Veris, December 2021) is located at Appendix B of this report.

5.5.2. Clause 52.05 – Signs

A permit is required for the display of a business identification sign pursuant to Clause 52.05.

The site is located within a Category 4 (Sensitive area), given the land is within the Farming Zone. The maximum size a business identification sign can be in this area is 3m^2. The proposed signs are in line with Clause 52.05-8 and 52.05-12 as mentioned above, with a total area of 2.88m^2. See section 3.2.7 of this report for more information regarding indicative signage.

5.5.3. Clause 52.17 – Native Vegetation

A permit is required under this clause as the removal of native vegetation, including dead native vegetation.

The purpose of this clause is to:

"Ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved through a three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017) (the Guidelines) to manage the removal, destruction or lopping of native vegetation to minimise land and water degradation. This approach includes:

1. *Avoid the removal, destruction or lopping of native vegetation.*
2. *Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
3. *Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*
4. *To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation."*
5. *An assessment of this clause against the proposed development is evidenced at section 7.5.3 of this report.*

5.5.4. Clause 53.02 – Bushfire Planning

This clause applies to an application under Clause 44.06 – Bushfire Management Overlay.

The purpose of this clause is to:

- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*

- *To ensure that the location, design and construction of development appropriately responds to the bushfire hazard.*
- *To ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.*
- *To specify location, design and construction measures for a single dwelling that reduces the bushfire risk to life and property to an acceptable level.*

Clause 53.02-4 – Bushfire protection objectives

The landscape, sitting and design objectives in this clause include:

- *Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.*
- *Development is sited to minimise the risk from bushfire.*
- *Development is sited to provide safe access for vehicles, including emergency vehicles.*

The defendable space and construction objective is:

- *Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on buildings.*

The water supply and access objectives include:

- *A static water supply is provided to assist in protecting property.*
- *Vehicle access is designed and constructed to enhance safety in the event of a bushfire.*

A Fire Risk assessment (12 April 2023) of the proposed development against this clause and the CFA Design Guidelines, including mitigation strategies recommended by Ecological Australia, is detailed at section 7.5.2 and 8.7 of this report.

5.5.5. Clause 53.13 Renewable Energy Facility (Other than Wind Energy Facility)

This clause applies to land used and developed or proposed to be used and developed for a renewable energy facility. The site will be used and developed for a renewable energy facility; therefore this clause is applicable to the project. In addition, pursuant to the Farming Zone, a Section 2 use must meet the requirements of Clause 53.13. Planning Scheme Amendment VC161 introduced new decision guidelines for renewable energy facilities.

The purpose of this clause is to:

"Facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area."

An assessment of the proposed development against Clause 53.13, including application requirements and decision guidelines, is detailed at section 7.5.4 of this report.

5.6. RELEVANT LEGISLATION

The following legislation, guidelines and policies are applicable to the proposal of the Barwon Solar Farm:

Commonwealth Legislation

- *Environmental Protection and Biodiversity Conservation Act 1999*

State Legislation

- *Environmental Effects Act 1978*
- *Flora and Fauna Guarantee Act 1988*
- *Environmental Protection Act 2017 – Environmental Reference Standards*

- *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*
- *Planning and Environment Act 1987* – The Greater Geelong Planning Scheme

Guidelines and Policies

- *Victoria's Guidelines for the removal, destruction or lopping of native vegetation*
- *Solar Energy Facilities – Design and Development Guidelines 2019,* DELWP
- *Country Fire Authority (CFA) Solar Energy Facilities – Design and Development Guidelines 2019*

Please refer to section 5.6 of this report for an assessment against all relevant legislation

5.7. SUMMARY OF PERMIT TRIGGERS

In summary, the following permit triggers apply to the proposed installation on the subject site pursuant to the following clauses of the Greater Geelong Planning Scheme and state legislation.

- A permit is required for the use of land for a Renewable energy facility (other than Wind energy facility) within the Farming Zone pursuant to Clause 35.07-1
- A permit is required for building or works associated with a use in Section 2 - Renewable energy facility within the Farming Zone pursuant to Clause 35.07-4
- A permit is required to construct a building or construct or carry out works and to remove, destroy or lop any vegetation within the Significant Landscape Overlay pursuant to 42.03-2
- A permit is required to construct a building or construct or carry out works and to remove, destroy or lop any vegetation within the Environmental Landscape Overlay (ESO1 and ESO 4) pursuant to Clause 42.01-2
- A permit is required for the display of a business identification sign pursuant to Clause 52.05-2.
- A permit is required to removal of native vegetation, including dead native vegetation pursuant to Clause 52.17-1.

6. PLANNING ASSESSMENT

This section provides and assessment of the legislation, guidelines and policies which are applicable and relevant to the Barwon Solar Farm, these include:

Commonwealth Legislation

- *Environmental Protection and Biodiversity Conservation Act 1999*

State Legislation

- *Environmental Effects Act 1978*
- *Flora and Fauna Guarantee Act 1988*
- *Environmental Protection Act 2017 – Environmental Reference Standards*
- *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*
- *Planning and Environment Act 1987* – The Greater Geelong Planning Scheme

Guidelines and Policies

- Victoria's Guidelines for the removal, destruction or lopping of native vegetation
- CFA *Design Guidelines and Model Requirements, Renewable Energy Facilities 2019*
- *Solar Energy Facilities – Design and Development Guidelines 2019*, DELWP

6.1. ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act applies to developments and associated activities that have the potential to significantly impact on Matters of National Environmental Significance (MNES) protected under the Act.

An assessment against the EPBC Act policy statements published by the Australian Government which provide guidance on the practical application of EPBC Act has been provided in Table 6 of the provided Flora and Fauna assessment prepared by Biosis (February, 2023). In this assessment any potential habitat for EPBC Act listed species was assessed in accordance with relevant DAWE guidelines (e.g. DEWHA 2009, DSEWPaC 2011).

Habitat for one threatened flora and 18 threatened fauna species listed under the EPBC Act were identified within the study area.

Elgin energy have begun preparing a referral to the Australian Government (Minister for Planning) to determine whether the projects needs to be considered under the EPBC Act for impacts to these species based on the recommendations of the provided Flora and Fauna assessment prepared by Biosis (February 2023). This will be submitted to the Commonwealth following the lodgment of this application.

6.2. ENVIRONMENTAL EFFECTS ACT 1978

The Environment Effects Act 1978 establishes a process to assess the environmental impacts of a project. If applicable, the Act requires that an Environment Effects Statement (EES) be prepared by the proponent. The EES is submitted to the Minister for Planning and enables them to assess the potential environmental effects of the proposed development.

The 'Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978' (DSE 2005) provide a range of criteria that can be used to determine whether an EES may be required for a project.

As the project, in its current form, requires the removal of more than 10 hectares of native vegetation, removal of a FFG Act listed ecological community (Western Plains Grassland) the application will be referred to the Victorian Government (Minister for Planning) as recommended by the Flora a Fauna report prepared by Biosis.

6.3. FLORA AND FAUNA GUARANTEE ACT 1988

The FFG Act is the key piece of Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes.

Permit exemptions under the FFG Act generally apply to the non-commercial removal of protected flora from private land, unless there is 'critical habitat' that has been declared on the land.

As such, the study area is predominantly on private land, does not contain any declared 'critical habitat' for the purposes of the FFG Act and the flora species within are not being taken for the purpose of commercial sale. A protected flora permit is therefore not required.

For further detail regarding the removal of native vegetating please refer to the provided Flora and Fauna Assessment prepare by Biosis (February 2023) at Appendix H.

6.4. ABORIGINAL HERITAGE ACT 2006 AND ABORIGIONAL HERITAGE REGULATIONS 2018

The Aboriginal Heritage Act 2006 provides for the protection of Aboriginal Cultural Heritage in Victoria whilst the Aboriginal Heritage Regulations 2018 sets out the process as to when a Cultural Heritage Management Plan (CHMP) should be prepared for a development.

Elgin Energy have engaged the services of Ecological Australia to produce a Cultural Heritage Management Plan (CHMP number 18474) in compliance with the Aboriginal Heritage Regulations 2018. Regulation 7 of the regulations states that a CHMP is required if all or part of the activity area for the activity is an area of cultural heritage sensitivity, and all of part of the activity is a high impact activity.

Ecological Australia undertook an Aboriginal Heritage Desktop Assessment of the activity area. The methods used to undertake the desktop assessment included:

- Searching Victorian Government information online,
- Searching the Victorian Aboriginal Heritage Register (VAHR) and other archaeological resources for information relating to the area and the geographic region, and
- Reviewing and analysing the information gathered to identify and characterise the Aboriginal cultural heritage site types and locations likely to be present within the project area.

The following conclusions of the assessment have been drawn through a comparison of background research results and previous archaeological investigation undertaken within the geographic region:

- A total of 405 registered Aboriginal cultural heritage places are located within the region, as defined by a 10km buffer around the activity area.
- Majority of these places contain stone artefacts (93%), as well as scarred trees, stone features, earth features, Aboriginal Ancestral Remains, Aboriginal Cultural Places, Aboriginal Historical Places and a quarry.
- Clustering of places is evident along major, small and ephemeral water ways in the region, notably Little River, Hovells Creek and Sandy Creek.
- Located within the site is VAHR 7722-0498 (FORD 1): An artefact scatter recorded in 2001 compromising an unspecified number of quartz flakes and chipped stone artefacts identified on ground surface.
- A total of six Aboriginal cultural heritage places are also located within 200 metres of the activity area boundary:

– VAHR 7722-0036 (Mount Rothwell Burial): Multicomponent Place – Aboriginal Ancestral Remains (Burial) and Artefact Scatter

– VAHR 7722-1121 (Ford Proving Ground): LDAD

– Four Object Collections comprising reburied artefacts collected as a part of CHMP 14184

The findings of the desktop assessment indicate that it is *reasonably possible* for Aboriginal cultural heritage to be present within the site, which resulted in the requirement that the CHMP progress to a standard assessment ground survey under Regulation 7 of the Aboriginal Heritage Regulations 2018.

Following the desktop assessment Elgin Energy then engaged the services of Eco Logical Australia to produce a Cultural Heritage Standard Assessment (October 2022). A field survey was undertaken on from 15th 25th March 2022 by three archaeologists and three WTOAC representatives. The methods of the Assessment included a foot-survey using a combination of:

- Survey of areas of archaeological potential identified in desktop assessment (surfaces along watercourses; exposures and outcrops on granite hill landforms),
- Pedestrian transects undertaken across broad landforms (flood plain; volcanic plain; stony outcrops),
- Systematic inspection of all identified exposures,
- Examination of all mature indigenous trees,
- Checked for the presence of caves and rock shelters, and
- Excavation of 26 manual auger probes.

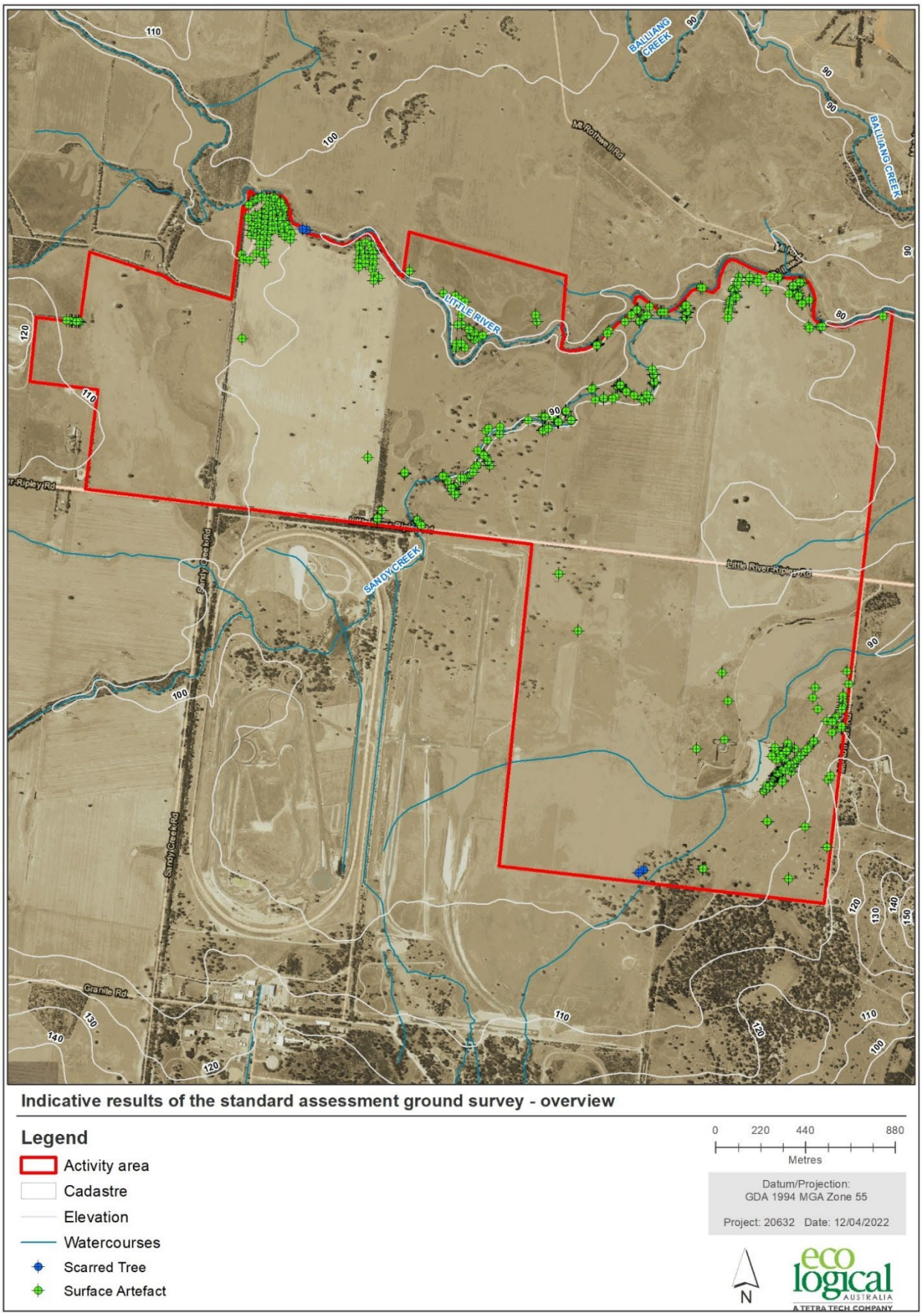
Results of the Standard Assessment include:

- The activity area contains nine separate Investigation Areas (IAs) based on the presence of the various landforms,
- 839 stone artefacts,
- 3 scarred trees,
- No caves, cave entrances or rock shelters were identified,
- Artefacts are concentrated along watercourses – Primarily Little River and Sandy Creek,
- High densities along sections of Little River, and
- Concentrations on granite hills section in southern portion of the activity area.

The results of the Desktop Assessment are contained in Appendix Q of this report. The results of the Standard Assessment prepared by Eco Logical Australia (October 2022) are contained within Appendix I of this report.

A meeting was held with WTOAC on 13th September 2022 to discuss the results of the Standard Assessment and present a methodology for a Complex Assessment, to support the CHMP being finalised and assessed. Based on this discussion it is expected that the Complex Assessment fieldwork will be undertaken mid-2023 and CHMP can be considered for approval in Q3 of 2023.

Figure 19 Standard Cultural Heritage Assessment Overview



Source: Biosis 2022

6.5. VICTORIA'S GUIDELINES FOR THE REMOVAL, DESTRUCTION OR LOPPING OF NATIVE VEGETATION

The Guidelines are incorporated into the Victoria Planning Provisions and all planning schemes in Victoria (DELWP 2017a). The Guidelines replaced the previous incorporated document titled Permitted clearing of native vegetation – Biodiversity assessment guidelines (DEPI 2013) on 12 December 2017.

The purpose of the Guidelines is to guide how impacts to biodiversity should be considered when assessing a permit application to remove, destroy or lop native vegetation. The objective for the guidelines in Victoria is 'No net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'.

Under the Guidelines, there are three assessment pathways for assessing an application for a permit to remove native vegetation: basic, intermediate and detailed.

Based on the total area (hectares) of native vegetation (including any patches and scattered trees) proposed to be removed this application for removal of native vegetation must meet the requirements of, and be assessed in, the **detailed** assessment pathway.

A detailed determination of the assessment pathway relevant to the proposed development is provided in Appendix H prepared by DELWP.

6.6. CFA DESIGN GUIDELINES AND MODEL REQUIREMENTS, RENEWABLE ENERGY FACILITIES 2022

This Fire Risk Assessment (FRA) for the project has been prepared by Eco Logical Australia (September 2022) in support of an application in accordance with the Design Guidelines and Model Requirements, Renewable Energy Facilities (CFA 2022). A Copy of the assessment has been provided at Appendix O of this report.

Overall, the FRA demonstrates compliance with both Section 5.3 of the CFA Design Guidelines (CFA 2022) model requirements and also the overall the aims and objectives as covered in Section 1.3.

6.7. SOLAR ENERGY FACILITIES DESIGN AND DEVELOPMENT GUIDELINES 2019

The Solar Energy Facilities Design and Development Guidelines provide an overview of the policy, legislative and statutory planning arrangements for solar energy facility projects in Victoria.

The guideline came into effect following amendment VC161 (dated 17 September 2019) which amended the Victoria Planning Provisions and all planning schemes to introduce new requirements for renewable energy facilities.

6.7.1. Identifying Suitable Locations

Table 3 Identifying suitable locations - Solar Energy Facilities Design and Development Guidelines 2019

Consideration	Response
Ideal Siting Conditions A solar energy facility should not lead to: – the loss or interruption of supply to the immediate or broader electricity transmission network – the loss of vegetation, habitat or species of environmental importance – the loss of cultural heritage or landscape values of significance	▪ The permit applicant will engage contractors to install the facility, consistent with the requirements of the electricity transmission network operators. ▪ It is unavoidable that vegetation will be lost due to the nature of the installation. However, assessments have been undertaken to identify vegetation of significance and value that can be retained, and offsets will be provided for the vegetation lost. These offsets include a combination of new planting and relocation of

Consideration	Response
– the loss of productive state-significant agricultural land – increased exposure of the area to fire flood or other natural or environmental hazard	vegetation within a designated ecological corridor that runs north to southwest through the site, and the purchase of native vegetation credits. ▪ The ecological corridor located along the Little river and Sandy river catchments is an essential element to conserving the native habitats and species of the area and limiting the impact of vegetation removal on the ecosystem. This is particularly relevant for the future regeneration of the area during its operation as a solar facility and post its life cycle. Further details of vegetation removal and offsets are discussed in the Flora and Fauna assessment prepared by Biosis (February 2023) at Appendix H. ▪ The findings of the desktop assessment indicate that it is reasonably possible for Aboriginal cultural heritage to be present within the activity area, which resulted in the requirement that the CHMP progress to a complex assessment. This is a complex assessment to determine the final methodology for impact mitigation/ minimisation. This is contained at Appendix Q. ▪ A Cultural Heritage Management Plan is being prepared for the project. Engagement with the Wadawurrung has been ongoing since 2020. ▪ As stated in the provided agricultural impact assessment, the subject land is neither highly productive nor highly versatile. It is not considered to be significant land or strategically important land from an agricultural perspective. As the solar facility will maintain light grazing onsite, the change of use will result in a reduction in the overall usable agricultural asset rather than a complete loss. ▪ As stated in the Fire Risk assessment provided, the location of the solar energy facility complies with suitable siting conditions as defined by the CFA 2019 Guidelines. While the likelihood of bushfire is considered low, ignition and fuel management considerations and mitigation measures to reduce any potential impact have been considered. Flood modelling detailed in the Hydrology Assessment (Ecological

Consideration	Response
	Australia, September 2022) highlights that while there is some potential for flood impacts on the proposal, it is considered a conservative approach due to soil type and flow rates across the site.
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 – to avoid the loss of native vegetation and biodiversity and if losses cannot be avoided, they are minimised and can be offset – close to the electricity grid network to minimise the need for additional infrastructure and associated impacts – a sufficient distance from existing urban areas or designated urban growth areas – where there can be adequate space between facilities within an area to avoid cumulative impacts of built form concentration – away from the floodplain of a major water course or wetland – where it has ready access to main roads	▪ Earthworks are not proposed, with the exemption of foundations for substation batteries and inverters, and ground disturbance for underground cables, access roads and fences. The panels do not require significant ground disturbance; these are supported on poles driven into the ground (or pre drilled) which can be removed with ease when the facility ends its lifecycle. ▪ The facility has been designed to maximise the retention of vegetation on site. Offsets have been provided to ensure vegetation lost is either relocated or replaced in designated conservation areas onsite. ▪ The project will connect to the grid via the existing Geelong terminal to Keilor terminal 220 KV powerline which passes through the southwest corner of the development site. Due to the network strength at this location, a Full System Strength Impact Assessment is not required according to AEMO. ▪ The site is not located near any existing urban areas designated urban growth areas. Majority of the surrounding land is made up agricultural land or nature reserve. ▪ There are no existing solar facilities in this area. The site has been located and designed to minimise or avoid impact to surrounding sensitive uses, areas of cultural sensitivity and native vegetation. ▪ The Hydrology Assessment (September 2022) detailed at Appendix K of this report outlines the site does not impact upon a major flood plain, watercourse or wetland. ▪ There are six proposed access points, which will be used to service the site, five of which will be from Little River Ripley Road, the sixth is accessed from Mt Rothwell Road. Where possible existing access have been utilised or retrofit to accommodate a CFA firefighting

Consideration	Response
	vehicle at a minimum. This will minimise ground disturbance and avoid further removal of native vegetation. ▪ The access from Mt Rothwell Road located near the south eastern extent of the site is the access that will be used to access the battery storage system and the substation for operation and maintenance purposes.
Connecting to the electricity transmission network: – Electricity transmission network connections – Managing cumulative effects in an area (too many facilities in an area can): • reduce the availability and/or productivity of strategic agricultural land, particularly in irrigation districts • result in landscape-scale visual impacts, due to an overconcentration of built form in an area • impact the area's biodiversity, habitat or wildlife, due to an overconcentration of built form.	▪ The project will connect to the grid via the existing Geelong terminal to Keilor terminal 220 KV powerline which passes through the southwest corner of the development site. Due to the network strength at this location, a Full System Strength Impact Assessment is not required according to AEMO.There are no other solar farms in the City of Greater Geelong. The closest solar farm to the proposed site is in Anakie, a small 5MW solar farm, which is currently under assessment. Additionally, the 3MW Black Rock Solar Farm supplies power for the Black Rock Water Reclamation Plant owned and operated by Barwon Water.
Protecting environmental values – Crown Land – Flora and fauna – Native vegetation and biodiversity	▪ The study area also encompasses a section of road reserve along Russells Bridge Road and Brownes Lane. Two protected flora species were identified in these reserves. These species will not be affected by the proposal. ▪ A Flora and Fauna assessment has been undertaken by Biosis (February 2023). Based on the current design, the proposed development will require the removal of 18.330 hectares of native vegetation, comprised of 14.294 ha of patch vegetation and 70 scattered trees. ▪ As the removal of vegetation on the site is unavoidable due to the nature of the installation an assessment has been undertaken to identify vegetation of significance and value that can be retained and potential offsets for vegetation lost. ▪ The applicant considers that is has undertaken reasonable measures to protect the environmental values of the area by firstly

Consideration	Response
	avoiding high impact areas, and minimising and offsetting unavoidable impacts. Refer to section 8.3 of this report for further details.
Protecting cultural heritage	A Cultural Heritage Management Plan is being prepared for the project. Engagement with the Wadawurrung has been ongoing since 2020. The findings of a standard assessment indicated that Aboriginal cultural heritage is present within the site, which resulted in the requirement that the CHMP progress to a complex assessment. The project has been designed to avoid all cultural heritage found to date with avoidance of sensitive areas including buffers from waterways. A results meeting to discuss the complex testing methodology took place on Tuesday 13 of September. Refer to section 8.9 of this report for further details.
Avoiding loss of high-value agricultural land – Strategically important agricultural land – Solar energy facilities in irrigated districts	As stated in the provided agricultural impact assessment, the subject land is neither highly productive nor highly versatile. It is not considered to be significant land or strategically important land from an agricultural perspective. The subject site is not located within an irrigation district.
Minimising impacts on landscape values	The Visual impact assessment concludes overall, the project is assessed as having a low level of visual impact on surrounding sensitive viewpoints, primarily due to the limited number of sensitive viewpoints and the relative lack of visibility resulting from existing vegetation throughout the landscape and rising topography. The residual visual impact will typically reduce to very low after the establishment of amelioration measures. For further detail please refer to section 8.5 of this report.
Natural hazard management Bushfire management Flood management	▪ The Fire Risk assessment prepared by Ecological Australia (September 2022) outlines the proposal in relation to the Design Guidelines (CFA, 2019), including relevant model requirements and compliance methods. Given the background hazard context and landscape risk profile, its siting, construction,

Consideration	Response
	design and mitigation strategies, the potential risk of fire impacting on the proposed solar farm is considered to be low. Additionally, the solar farm is not expected to result in a noticeable increase in fire risk in the locality and to downwind assets and values. ▪ The Hydrology Assessment prepared by Ecological Australia (September 2022) outlines that while general modelling has shown there is potential for flood impacts on the proposed Barwon Solar Farm, this may be a conservative approach depending on the soil type of the site. In areas where the soil contains more sand, rainfall will likely infiltrate, thus reducing the flow rates and flood extents across the site. Flood management has been considered in the final design of the proposal, including examining the flood levels and impacts outlined in the Hydrology Assessment and designing according to relevant recommendations. For further detail refer to section 8.10 of this report.

6.7.2. Best Practice for Proponents

Table 4 Best Practice for Proponents - Solar Energy Facilities Design and Development Guidelines 2019

Consideration	Response
Engaging the community – Early community consultation is important – Engaging Traditional Owners – Developing well-planned consultation – Benefit-sharing – Ongoing engagement	The permit applicant has undertaken extensive consultation with stakeholders including community groups, residents, traditional owners and government. Refer to section 4.1 for further details regarding community engagement undertaken.

6.7.3. Design stage

Table 5 Design Stage - Solar Energy Facilities Design and Development Guidelines 2019

Application Requirements	Response
Siting facility components	The solar facility has been carefully designed over 16 months taking into account site constraints and the DELWP's Solar-Energy-Facilities-Design-and-Development-Guideline-August-2019. The design accounts for:

Application Requirements	Response
	▪ Native Vegetation ▪ Cultural Heritage ▪ Visual Impact to neighbouring properties ▪ Bushfire Mitigation ▪ Impacts to waterways ▪ Noise ▪ Efficiency and economic viability of the solar facility In taking account of these constraints the development design process has had to balance these and the economic viability of the development given the high voltage (220KV) connection required for the site to be a minimum size to achieve a viable project. A minimum setback of 30 metres from any part of a component that makes up a solar pod or zone, or other building or structure, measured from the neighbouring property boundary is recommended within the guidelines. As set out in sections 3.2.1 the setbacks across the site vary from 600 metres down to 13.5 metres. As stated above a full assessment across the site has been undertaken in regard to impacts upon adjacent land, notably in regard to visual impact which has formed part of the design response. Providing a blanket 30 metres setback around all perimeters of the site does not make practical sense and does not account for various topographical features and the nature of adjacent uses. This is roughly divided into direction justifications below: **North** – The site's northern boundary along Little River and Sandy Creek has a proposed setback of minimum 50 metres, which is increased in several locations to avoid important areas of Aboriginal Cultural Heritage and native vegetation. **South** – Majority of the southern boundary interfaces with Little Ripely Road and Travelers Way to the south-east and features a minimum set back of 20 metres. We note, all potential green glare predicted has been sufficiently mitigated through high density screening solutions proposed

Application Requirements	Response
	by the visual impact assessment prepared by Urbis. **East –** The Mount Rothwell Estate is the nearest residence to the eastern boundary of the site. Although the residence is well setback from the common boundary the project will be highly apparent and is therefore considered to be highly sensitive from a visual impact perspective. The ameliorative screen planting along the Project boundary will be set well away from the residence and designed to allow for views to the distant Brisbane Ranges. The project features a minimum setback of 30 metres from the common boundary of its site. **West** - The site almost completely visually contained in views from the west by rising topography. The Ford Proving Ground is to the west of the site, where the development and validating testing of new vehicles occurs. It is important to note that although the site is in the Farming Zone, it is considered an industrial use rather than agricultural use. There is unlikely to be any visual or amenity impacts from the proposed development to this site. The project features a minimum setback of 13 metres from the common boundary of this site. **Refer to the site layout in Appendix C for further details.**
Landscape screening	▪ The subject site has exposed boundaries to the east, south and west which will be screened with perimeter screen planting to ameliorate views. The northern boundary is partially screened by vegetation lining the Little River. ▪ The screen planting will differ according to location around the site, while still respecting the site's unique existing character and form.
Glint and glare management	▪ Given the tilting solar panels, the flat topography with no opportunities for overlooking of the Project, the potential for impact resulting from reflection or glare is considered to be low.

Application Requirements	Response
	▪ Additionally, proposed screen planting around the perimeter of the Project will mitigate this impact. ▪ Please see Appendix L for the visual impact assessment prepared by Urbis, which provides a detailed assessment of glint and glare impacts.
Designing security measures	CCTV is proposed near the perimeter of the site and secure fencing around the boundary of the site for security purposes.
Traffic impacts	▪ A traffic impact assessment has been undertaken by Urbis (September 2022) and concludes, traffic from the proposed development will have a negligible impact on the surrounding road network during the operation stage. ▪ A Construction Traffic Management Plan will be prepared prior to the issue of a Construction Certificate, detailing the construction trip generation and haulage routes.
Noise	▪ NDY have conducted a noise emission assessment to determine if the predicted noise levels from the site are below the NIRV limits. ▪ The three most affected residential receivers range between 70m and 840m from the project boundary. Noise attenuations measures such as acoustic barriers are to be installed around the BESS and some Inverters to ensure the proposal is compliant with NIRV limits. These will be incorporated into the final detailed design and we would expect to be conditioned onto any planning permit that is granted for the project. ▪ Noise will be generated during the installation of the solar facility, by the machinery required on site to position and install the proposed equipment and to construct access tracks. Construction noise impacts will be subject to a construction management plan and construction will occur only within normal working hours.

Application Requirements	Response
Earthworks and dust management	Further details will be provided within a construction management plan, which will be prepared before construction begins.
Natural hazard risk management – Bushfire – Flooding Other matters: – Dangerous goods and building fire safety – Electromagnetic radiation and interference – Heat island effect	▪ The Fire Risk Assessment (April 2023) outlines mitigation strategies to be taken to reduce the potential impact of bushfire to the site and surrounding areas. During the design stage, designs specific to solar energy facilities and battery energy storage systems have been implemented. An outline of all mitigation strategies taken is detailed at section 8.7 of this report. ▪ The Hydrology Report produced by Ecological Australia outlines that while there is potential for flood impacts on the Barwon Solar Farm, this may be a conservative approach. Sandy soil types will allow for rainfall infiltration, thus reducing flow rates and flood extents across the site. During the design stage the following aspects have been examined: – The location of the BESS in relation to flood extend and velocity mapping – Where flow paths cross existing access roads, causeways will be implemented. These will be included in the detailed design required for construction. – Water ways will safely pass under solar arrays and electrical systems ▪ The facility would produce only low levels of electromagnetic energy associated with electrical equipment and will be fully in accordance with the Australian Standards (Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz (2002)). ▪ Where there is adjacent horticulture or cropping activities a minimum of 10 metres separation has been adopted from the property boundary to any part of physical structure of the facility in compliance with the Guidelines. A mineral earth fire break to a width of 10m is to be maintained around the entire perimeter of the site as well as the BESS compound, which will minimise the impact of grassfire and/or bushfire spread. Additionally, BESS components will be fully enclosed in non-combustible shipping module

Application Requirements	Response
	containers with monitoring, safety and coolant fire suppression systems.

6.7.4. Construction and Operation Stage

Table 6 Construction and Operation Stage - Solar Energy Facilities Design and Development Guidelines 2019

Consideration	Response
– Environmental management plan – Risk and emergency management planning – Site access and traffic management – Construction noise and dust management – Decommissioning	Environmental management plan (EMP) ▪ This will be prepared before construction commences and would be expected to be conditioned onto any planning permit granted for the development. Risk and emergency management planning ▪ A fire and emergency plan will be prepared before construction commences and would be expected to be conditioned onto any planning permit granted for the development. Site access and traffic management ▪ A traffic impact assessment (Urbis, September 2022) has been prepared to outline access arrangements and ▪ impacts; however, a construction traffic management plan will be prepared before the construction stage commences and would be expected to be conditioned onto any planning permit granted for the development. Construction noise and dust management ▪ A construction management plan will be prepared before the construction stage commences and would be expected to be conditioned onto any planning permit granted for the development. Decommissioning ▪ The permit applicant will operate the facility throughout its operational lifecycle and will be responsible for removing equipment and returning the site to its previous condition if the facility ceases to operate. A condition of consent outlining this would be expected to be

Consideration	Response
	placed onto any planning permit granted for the development.

6.7.5. Application Requirements

Table 7 Application Requirements - Solar Energy Facilities Design and Development Guidelines 2019

Requirement	Response
Site analysis	A site layout is provided in Appendix C. Refer to Figure 1and Figure 2 for aerial maps and photographs identifying the site location and the surroundings, including the nearest electricity substation and site access road.

6.7.6. Decision Guidelines

Table 8 Decision Guidelines - Solar Energy Facilities Design and Development Guidelines 2019

Decision Guideline	Response
Clause 65 Decision Guidelines	Refer to section 6.7.6 for further details regarding Clause 65 decision guidelines.
Clause 53.13 Renewable energy facility	Please refer section 7.5.4 of this report for an assessment against the decision guidelines of Clause 53.13.

6.7.7. Plans That May Be Required as a Condition of a Permit

Table 9 Plans That May Be Required as a Condition of a Permit - Solar Energy Facilities Design and Development Guidelines 2019

Requirement	Response
Development plan - The responsible authority may require amendments to be made to the development plan documentation provided as part of the application: ▪ Landscape Plan ▪ Traffic management plan (TMP) ▪ Environmental management plan (EMP) ▪ Fire and emergency management plan ▪ Complaint investigation and response plan	Development plans The evolution of the design layout to respond to site constraints was set out in section 3.2 of this report. The applicant will review any requests to change the development and will implement these if possible and if there are benefits to the community and environment. Landscape Plan ▪ Provided (refer to Appendix F) Traffic management plan (TMP) ▪ This will be prepared before the construction stage commences

Requirement	Response
	Environmental management plan (EMP) ▪ This will be prepared before the construction stage commences Fire and emergency management plan ▪ This will be prepared before the construction stage commences Complaint investigation and response plan ▪ If required by a condition of consent, this will be prepared before the construction stage commences

7. GREATER GEELONG PLANNING SCHEME

7.1. STATE AND LOCAL POLICY

The proposed development has been assessed in accordance with state and local planning policies and planning controls applicable to the site contained within the Greater Geelong Planning Scheme. Below is an assessment of the goals of the Victorian Government and the City of Greater Geelong in relation to climate change against the relevant planning scheme policy and controls contained within section 5 of this report.

Renewable energy sources such as solar power have the potential to mitigate climate change through reducing greenhouse gas emissions from fossil fuel combustion. For this reason, the Victorian Government seeks to accelerate the development of well-sited and well-designed renewable energy generation facilities in Victoria, to reduce emissions, create jobs and put downward pressure on energy prices, while meeting legislated generation targets.

The *Climate Change Act 2017*, provides Victoria with the legislative foundation to manage climate change risks and drives the transition to climate-resilient communities and the economy with net-zero emissions by 2050. Additionally, the sustainability pillar within the *G21 Geelong Region Alliance* emphasises the need to achieve zero carbon emissions while building a clean energy economy

The Barwon solar farm will contribute significantly to Victoria's renewable energy generation targets (50% by 2030) and the reduction of greenhouse gas emissions (legislated to achieve net zero by 2050), with the project able to generate enough electricity to power the equivalent of approximately 98,000 homes and reduction of 400,000 tonnes of CO2 emissions (the amount required to power those homes via fossil fuels).As discussed in greater detail in this report, the Barwon solar farm represents a renewable energy facility that will bring economic, social 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

Victoria's *Renewable Energy Action Plan* outlines the actions the Victorian Government are taking to encourage investment in the renewable energy sector, including a long-term policy agenda and pathway which will drive investment and action in the sector.

The proposal meets state and local initiatives to invest in renewables as well as the related state and local policies through the following:

- Aligns with the G21 goal to provide energy infrastructure for the facilitation of growth within the region and diversity the local economy (Clause 17.01-1S & 17.01-1R) as well as supporting sustainable agricultural land use in Greater Geelong (Clause 14.01-2L-01).
- The proposal is compliant with noise limits and will not adversely impact community and amenity (Clause 13.05-1S).
- The land is neither highly productive nor highly versatile, and the proposed developments has no perceived impacts to surrounding farm business or significant impacts to the agricultural amenity of the region. The land is also classified as non-strategic (Clause 14.01-1S).
- The proposal aligns with policy direction to incorporate resilience into natural hazards, which include future risks of climate change (Clause 19.01-1S & 19.01-2S).
- The proposal is compliant with Clause 12.03-1S (Hydrology) as it does not impact upon a floodplain, major water course or wetland.
- The proposal complies with the regulations associated with Clause 13.02 (Bushfire), including measures taken which align with the Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA, 2019), as detailed in section 6.6 of this report.
- The proposal complies with the policy direction associated with Clause 12.01 (Biodiversity) as although vegetation removal is required onsite, the proposed installations will not have a significant impact on the ecology of the of the site or surrounding area.
- The proposal complies with the regulations associated with Clause 52.17 (Native Vegetation) and includes a range of measures to protect the existing ecology of the site by avoiding, minimising and

offsetting impacts in accordance with Victoria's guidelines for the removal, destruction or lopping of native vegetation.

- The proposal will comply with Clause 15.03 (Heritage) as well as the recommendations and mitigation measures in provided in the Cultural Heritage Standard Assessment (Ecological Australia, October 2022) (Appendix I) and the Cultural Heritage Desktop Assessment (Ecological Australia March 2022) (Appendix Q) to ensure protection of aboriginal cultural heritage continues during construction and operation of the facility.

Recent planning scheme amendments portray the direction of the Minister for Planning in relation to Victoria's transition to renewables and renewable energy sources. The proposal proceeds current policy guidance and foresees targets of policy reform in the future.

- Amendment VC161, gazetted on September 17, 2019, introduced new requirements for renewable energy facilities and made the Minister for Planning the responsible authority for all new renewable energy facilities that are 1 megawatt and greater. The introduction of the *Solar Energy Facilities Design and Development Guideline* (Department of Environment, Land, Water and Planning, August 2019) (the Guideline) for planning permit applications for renewable energy facilities provided information about policy considerations, legislative requirements and best-practice approaches relevant to the proposal. The proposed development will deliver economic and environmental benefits by facilitating a transition to a low-carbon economy with renewable energy generation and the reduction of greenhouse gas emissions.

- Amendment VC221, gazetted on August 4, 2022, made changes to the VPP and all planning schemes to facilitate all-electric developments to support the implementation of Victoria's *Climate Change Strategy 2021* and *Gas Substitution Road Map 2022.* The relevant amended Clause 19.01-1S (energy supply) seeks to facilitate appropriate development of energy supply facilities. The proposal aligns with Clause 19.01-1S as it will improve sustainability and social outcomes and diversify and provide a suitable transition to a low-carbon economy. Victoria's *Climate Change Strategy 2021* sets out a state-wide response to the impacts of climate change, and specifies actions taken to achieve the target of net-zero emissions by 2050. Action 1 defines facilitating *a clean energy economy* as an important aspect of reductions targets, including the provision of reliable, renewable and affordable energy. The strategy notes that "*by 2030, 50% of electricity generated in Victoria will be sourced from renewables*."

- While there have been several recent amendment changes in relation to energy goals in the Victorian Planning Provisions, there is little directing policy regarding Solar Farms and related facilities (particular provisions) to meet the energy demands of the state. The proposal proceeds current policy guidance and looks towards the future to align with future policy reform, direction and goals for carbon neutrality in Victoria.

As discussed in section 5.4.1 of this report, state and local policy seeks to maintain and enhance the biodiversity of native flora and fauna communities through native planting, offsets and retention of native vegetation where possible to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.

As mentioned, the site location and layout have been carefully considered to avoid impacts to biodiversity by restricting native vegetation removal to what is reasonably necessary to achieve the minimum yield to make the development economically viable. On balance the proposed site location and layout avoids major removal of native vegetation on site and minimises impacts to biodiversity through appropriate site selection, design and operation management to deliver a large-scale clean energy project that will help facilitate a needed transition to renewable energy in Australia.

Importantly offsets commensurate with the net loss of biodiversity as a result of the removal of native vegetation have been included within the proposal in line with the strategies of Clause 12.01-2S and the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017). Further discussion of theses offsets and impacts to the existing biodiversity of the area are discussed in section 8.3 of this report.

State and local planning policies also seek to conserve and protect Aboriginal sites and places of cultural heritage significance via liaising with the local Aboriginal community to identify areas and sites of cultural sensitivity. Elgin Energy have engaged the services of Ecological Australia to produce a Cultural Heritage Management Plan (CHMP number 18474) in compliance with the Aboriginal Heritage Regulations 2018 and have been involved extensively with the Wadawurrung Traditional Owner Aboriginal Corporation (WTOAC) throughout this process. The permit application will comply with the recommendations and mitigation

measures provided in CHMP to ensure protection of aboriginal cultural heritage continues during construction and operation of the facility.

7.2. FARMING ZONE

As listed within Section 2 of the Table of uses in Clause 35.07-1, a permit is required for a Renewable energy facility (other than Wind energy facility). The purposes of this zone, as outlined in Clause 35.07 of the planning scheme are listed in section 5.5.5 of this report.

The proposed solar farm is considered to be in accordance with the requirements of the Greater Geelong Planning Scheme and the intent of the Farming Zone (Clause 35.07).

In order to satisfy the requirements of the Decision Guidelines of Clause 35.07-6, the following matters have been considered in this assessment:

- General Issues
- Agricultural issues and the impacts from non-agricultural uses
- Accommodation issues
- Environmental issues
- Design and siting issues

7.2.1. General Issues

Table 10 Farming Zone Considerations

Decision Guideline	Response
The Municipal Planning Strategy and the Planning Policy Framework	Please refer to section 5.2 and 5.4 of this report for an assessment against the Greater Geelong State and Local Planning Policy Framework.
Any Regional Catchment Strategy and associated plan applying to the land.	None apply to this land.
The capability of the land to accommodate the proposed use or development, including the disposal of effluent.	The land has been assessed to be entirely capable of accommodating the proposed development as outlined throughout this report with minimal amenity impacts to surrounding properties or to the long terms use of the site itself for agricultural use beyond the life span of the proposed Solar Farm.
How the use or development relates to sustainable land management.	The proposed land use seeks to provide a source of renewable energy for the surrounding area with no waste impacts as a result of its operation. The nature of construction for this land use is considered to be low impact, avoiding heavy duty foundations and disturbance to the land. As a result, the agricultural potential of the subject land is able to be retained after the life cycle of the use (solar farm) has been completed. Additionally, the site will be available for agricultural use during its operation as solar installation as the land remains ideal for grazing (most likely sheep).

Decision Guideline	Response
Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.	The use and development of the land as a solar farm to produce renewable energy is entirely appropriate use of the land. Solar installations require large areas of land to facilitate the capture of solar radiation. The subject site provides a land profile that is ideally located on land that is neither highly productive nor highly versatile. To the south and west of the Project Site is a large property owned by Ford Motor company and used for the testing and commissioning of vehicles. There is no agricultural use of this property. To the south and east of the Project Site are the northern extremities of the You Yangs National Park and the Mount Rothwell Wildlife Sanctuary. There is no agricultural use of these tracts of land. East of the Project Site and north of the Mt Rothwell Wildlife Sanctuary, along the entire northern extremity and part of the western perimeter of the Project Site, the neighbouring properties are in various forms of agricultural use. The use includes sheep grazing, broadacre cropping for cereals and oilseeds, an Olive Grove, some beef cattle grazing and equine grazing. No interdependence between the farms of the Project Site and these adjoining properties has been identified. They operate as separate stand-alone enterprises. There is clearly no identifiable impact from the installation of solar panels on any of these surrounding farming businesses. Overall the removal of up to 505 hectares from cropping use should not result in any discernible negative impacts on the agricultural use of the adjacent properties. It is important to note that 225 hectares of land will not be developed, partially maintained as grazing land for sheep. Importantly, sheep grazing will be able to continue within the solar farm installation, providing a duel use. Additionally there is potential for up to 40 hectares of this land to be reserved for conservation of an onsite-offset throughout the site, thus improving the land form and quality through direct management.

Decision Guideline	Response
How the use and development makes use of existing infrastructure and services.	The use and development will seek to use existing infrastructure and services in the following ways: ▪ Utilise the existing road network and access points to the site on its southern boundary. ▪ The project will connect to the grid via the existing Geelong Terminal to Keilor Terminal 220 kV powerline which passes through the southwest corner of the development site. ▪ Due to the network strength at this location, a Full System Strength Impact Assessment is not required according to AEMO.

7.2.2. Agricultural Issues and the Impacts from Non-Agricultural Uses

Table 11 Farming Zone Agricultural Issues and the Impacts from Non-Agricultural Uses

Decision Guideline	Response
Whether the use or development will support and enhance agricultural production.	Although the use will not directly support agricultural production, it will not affect it on the long-term use of this land or on surrounding land uses. The halting of cultivation during the lifetime of the project can also benefit the soil structure as a regenerative land management practice. When the project is decommissioned at the end of life the land will have had time to recover from intensive cultivation, restoring biodiversity and soil health.
Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.	If the proposed installation is not planned to be upgraded at the end of its life cycle, a decommissioning plan will be provided to DELWP for approval prior to decommissioning works being undertaken. Once this is completed the site will revert to full agricultural use as grazing land across the whole site as the nature of the construction and installation methods (refer to section 3.2 of this report) are designed to avoid long-term or adverse impacts upon the soil quality or land for long term agricultural use as grazing land.
The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.	The proposed solar installation will be contained wholly within the subject site and will produce no emissions of any kind; therefore, it will not impact the operation or expansion of adjacent nearby agricultural uses.

Decision Guideline	Response
The capacity of the site to sustain the agricultural use.	The site will maintain it's agricultural use as light grazing land in conjunction with the renewable energy facility.
The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.	The proposed development will not affect the agricultural qualities of the land. As stated, once the lifespan of the solar farm is complete, it would revert to its natural state maintaining the soil quality, access to water and rural infrastructure
Any integrated land management plan prepared for the site.	There is no integrated land management plan that applies to the site.

7.2.3. Dwelling Issues

The existing residential property located at 1320 Little River - Ripley Road, Balliang will also be retained. The owner of this property has signed a lease agreement to use the land for the purposes of grazing. A copy of this lease agreement (Thomson Geer Lawyers, September 2021) is contained in Appendix R (sensitive details redacted).

7.2.4. Environmental Issues

Table 12 Farming Zone Environmental Issues

Guideline	Response
The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.	The proposal has been sited and designed to protect soil and water quality and other natural features of the site as discussed in section 8.10 of this report. The development of the facility will involve substantial changes to the local hydrology, and special consideration of the risks of soil erosion is required. Further details of these considerations can be found in the Hydrology report contained in Appendix K.
The impact of the use or development on the flora and fauna on the site and its surrounds	The proposed development has been sited to minimise any impact on existing flora and fauna by taking into careful consideration the natural environmental features of the site including avoiding areas of remnant vegetation and identified habitat zones. Further details of the impact to flora and fauna are detailed in section 8.3 of this report.

Guideline	Response
The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.	Following the results of the Flora and Fauna Assessment (Biosis, February 2023) the solar farm layout has been significantly altered and reduced to avoid impact to native vegetation. The design has avoided the majority of the Plains grassland within the site and riparian vegetation along the Little River and Sandy creek. A rigorous approach to the avoidance of native vegetation has been undertaken through a design review process (4 designs as set out in section 3.2.1 of this report). Geotechnical studies have shown that large areas of the site are unable to be constructed upon due to the presence of rock on the surface or under 2m in depth. Nevertheless, the design has accounted for the limited areas of patch vegetation impacted (VQ5 and small section of VQ6 and 19). The installation of panels in low-quality vegetated areas is unlikely to limit dispersal activities as the ground layer will still be vegetated and relatively undisturbed as panels are installed on posts, with a relatively small direct disturbance footprint. There is a growing body of evidence from other solar projects that the partial shading caused by solar panels does not completely kill grassland species, and it is possible that some elements of the grassland (ie. Native grass species), may survive into the long term. The impact to trees has been minimised as far as possible through. Further design refinement in response to consultation with DEECA (including the DEECA RFI to the Planning Permit Application) has seen the contraction of the panels in favour of preserving a further 31 trees. At this stage, no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal. Any further reduction in development area would render the project economically unviable and the project would not be able to proceed. Further detail on this can be found in section 7.5.3 and section 8.3 of this report.

Guideline	Response
The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.	There will be no on-site effluent disposal. The site will have a compost toilet for maintenance workers which will be maintained on a regular basis with any compost waste being disposed of off-site.

7.2.5. Design and Siting Issues

Table 13 Farming Zone Design and Siting Issues

Guideline	Response
The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.	▪ Given the nature of the development, the solar installation will be distributed evenly across all 7 lots and maintain its agricultural use via sheep grazing across the developed land. ▪ Key areas of the subject site will remain undeveloped to ensure limited impact to areas of cultural and heritage sensitivity or ecological importance. ▪ The proposed battery and substation compound which take up a very small percentage of the total site area has been appropriately located to the far south of the site at the primary point of connection. ▪ Additional vegetation screening and acoustic barriers have been proposed around the BESS to ensure minimal impact to immediate roads and land uses. ▪ The existing residential property located at 1320 Little River - Ripley Road, Balliang will also be retained.
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.	▪ Although the solar installation results in a different landscape character from the existing setting, its low profile will ensure that from ground-based viewing locations, only localised changes to the landscape character will result. ▪ The following measures will be implemented to reduce visual impact: – Establish screen planting around selected perimeter areas of the project with screening species to ameliorate views. – Taller elements such as transformers and switching substations will be clad with non-reflective materials and be finished in a

Guideline	Response
	natural or neutral colour, as found in the landscape of the setting. – All internal powerlines for this site are proposed to be trenched. ▪ No impacts to on major roads are expected from traffic generation (refer to section 8.4 of this report). ▪ Further detail regarding visual impact associated with glare and glint is discussed in section 8.5.1 of this report. Please also refer to the landscape and visual impact assessment (September 2022) at Appendix L.
The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.	▪ The most visible changes to the landscape character of the existing setting will result to views from three adjacent residences. However, following amelioration, comprised of the establishment of locally indigenous screening vegetation along the Project boundaries, the landscape character will appear similar to the remainder of the regional agricultural landscape and other bands of vegetation that occur through the landscape of the region. ▪ The landscape of the Project setting has a generally high landscape absorptive capacity, as the flat topography does not allow for significant overlooking and the scattered, and occasionally dense vegetation in the area surrounding the Project. Screen planting will differ according to locations around the site, while still respecting the site's unique existing character and form.
The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.	The site will require a connection to the electricity grid via the 220KV transmission lines that run north to south through 1320 Little River Ripley Road. The project substation will be located immediately west of these powerlines and connect directly via cables on power poles within the projects substation (refer to section 3.2.8 for further details).
Whether the use and development will require traffic management measures.	▪ During the construction of the facility, traffic management measures will be put in place. The details of these will be provided to council prior to the construction stage through a traffic

Guideline	Response
	management plan part of the building permit application. ▪ The on-going operation of the solar farm will not require permanent traffic management measures due to the infrequency of traffic visiting the site which will be less than the current traffic that enters and exits the site for agricultural purposes. ▪ Please refer to the Traffic impact assessment at Appendix N (Urbis, September 2022).

As detailed above in the above table, the proposed installation will meet the requirements of Clause 35.07 and it is considered that the proposed installation is entirely appropriate use and development for the site within the Farming Zone.

7.3. ENVIRONMENTAL SIGNIFICANCE OVERLAY SCHEDULE 1 & 4 AND SIGNIFICANT LANDSCAPE OVERLAY SCHEDULE 1

The need for a permit to remove native or exotic vegetation within the study area will be triggered by the two Environmental Significance Overlays (ESO1 and ESO 4).

Under the ESO1- a permit is required for the removal of exotic and native vegetation pursuant to Clause 42.01 of the Greater Geelong Planning Scheme.

Under the ESO4 – a permit is required for the removal of native vegetation pursuant to Clause 42.01 of the Great Geelong Planning Scheme.

Refer to the examination of native vegetation removal under Clause 52.17 in section 7.5.3 for further detail.

7.4. SIGNIFICANT LANDSCAPE OVERLAY SCHEDULE 1 (FOOTHILLS OF THE YOU YANGS)

The site is subject to the Significant Landscape Overlay, schedule 1 (SLO1), applying to the Foothills of the You Yangs. SLO1 applies to the southeastern portion of the site, to the south of Little River-Ripley Road.

Under the SLO 1 - A permit is required to remove, destroy or lop any vegetation under this overlay pursuant to Clause 42.03-1.

Outside of native vegetation, the majority of vegetation is crop, pasture grasses, introduced trees, weeds and planted vegetation. The proposed removal of any non-native vegetation will require further consideration during the detailed design phase.

The You Yangs, to the south of the Project, are the dominant feature of the regional landscape. They rise progressively from the north to a maximum elevation of 319 m at Flinders Peak, located to the south of the range. The proposal has been sited and designed to be responsive to the landscape values of the area and avoid any potential for visual intrusion.

The landscape of the Project setting has a generally high landscape absorptive capacity, as the flat topography does not allow for significant overlooking and the scattered, and occasionally dense vegetation in the area surrounding the Project, provides visual screening, with the extent of screening increasing with distance from the Project.

For further mitigation of the visual matter, the establishment of locally indigenous screening vegetation along selected areas of the Project boundaries will ensure the landscape character will appear similar to the remainder of the regional agricultural landscape and other bands of vegetation that occur through the landscape of the region.

7.5. PARTICULAR PROVISONS

7.5.1. Clause 52.02 – Easements, Restrictions and Reserves

The purpose of this clause is to enable the removal and variation of an easement or restrictions to enable a use or development that complies with the planning scheme after the interests of affected people are considered.

There are several electricity easements that encumber the site (E-1, E-2 and E-3). Setbacks from these assets have been observed and included in the design of the proposal.

7.5.2. Clause 53.02-4 – Bushfire Planning Decision Guidelines

This clause applies to an application under Clause 44.06 – Bushfire Management Overlay.

Table 14 Bushfire Planning Decision Guidelines

Decision Guideline	**Comment**
The impact of any State, regional or local bushfire management and prevention actions occurring around the site and in the wider area on the bushfire hazard and the level of risk to the proposed development. Whether the risk arising from the broader landscape can be mitigated to an acceptable level or warrants the development not proceeding.	The Fire Risk Assessment produced by Ecological Australia (September 2022) emphasises the risk of fire spreading to and from the proposed solar farm is very low, based on the low likelihood of ignition, good suppression opportunities, impedances to fire development and spread (fuel breaks and reduced fuel areas). The Assessment can be found at Appendix O of this report.
Whether the proposed development meets the bushfire protection objectives of Clause 53.02-4. 1. Landscape, siting and design 2. Defendable space and construction 3. Water supply and access	It is submitted that the proposal meets the relevant objectives of Clause 53.02-4 mentioned above as: **Landscape, siting and design** ▪ The development is appropriate regarding the surrounding landscape given the site's flat the gentle terrain would not increase the risk to bushfire behaviour, and any surrounding landscape features have a low potential to exacerbate bushfire behaviour. ▪ The development is sited to minimise risk from bushfire, including at least 10m mineral earth fire breaks surrounding the entire site and BESS. ▪ The development is sited to provide safe access for vehicles, including emergency vehicles. A 6m wide perimeter road with the 10m perimeter firebreak around facility has been incorporated into the design layout, as well as an all-weather site access road and perimeter road around the BESS compound, with passing bays included every 600m. ▪ The design of the solar arrays and BESS substation comply with the objective to

Decision Guideline	Comment
	minimise vulnerability to bushfire attack. Mitigation strategies have been noted above and can be evidenced in detail in section 8.7 of this report. **Defendable space and construction** ▪ The BESS units will be housed in non-combustible steel containers with monitoring, safety and coolant fire suppression systems, surrounded by a mineral earth fire break of 10m. These strategies will mitigate the propagation of fire escape should thermal battery runaway occur. **Water supply and access** ▪ A static water supply is provided to assist in protecting property, comprising of 7 x 45,000L water tanks around the site. ▪ Vehicle access has been designed and constructed to enhance safety in the event of a bushfire.
Whether the proposed measures can be practically implemented and maintained in conjunction with the ongoing use of the land.	It is submitted that the proposed use and development of the land to produce renewable energy is an entirely appropriate use of the land, and the proposed bushfire measures will not impact the use of the land as a solar farm. While the proposed development requires a large area of land to facilitate this, it will not affect the long-term viability of the land for agriculture, nor adversely affect the land or surrounding properties through the implementation of bushfire measures.
Whether the use of an alternative measure meets the relevant objective having regard to the bushfire hazard and the nature of any constraint that prevents the applicable approved measure from being implemented.	It is submitted that all bushfire mitigation measures are compliant with Clause 53.02-4 and the CFA Design Guidelines.
If one or more of the objectives in Clause 53.02-4 will not be achieved in the completed development, whether the development will, taking all relevant factors into account, reduce the bushfire risk to a level that warrants it proceeding.	The proposal considers all objectives mentioned in Clause 53.02-4. Despite overall bushfire risk to the site is very low based on the aspects mentioned above, the risk still warrants mitigation measures. The measures taken outlined in section 8.7 of this report details how the objectives will be achieved to reduce bushfire risk, with also align with the CFA's Design Guidelines and Model Requirements for Renewable Energy Facilities.

7.5.3. Clause 52.05 – Business Identification Signage

The proposed signage is in accordance with the requirements as outlined in the Zone as well as the Victorian Planning Scheme's Particular Provisions (Clause 52.05-8 Decision Guidelines)

The main site access gates will display a flush 2.4x1.2m aluminium business identification sign. Clause 52.05 outlines several decision guidelines that are relevant to the assessment of the proposal. Below is an assessment of the proposal against the relevant Clause 52.05 assessment criteria.

Table 15 Assessment Against the Decisions Guidelines for Clause 52.05 - Business Identification Signage

Clause 52.05 decision guidelines	**Response:**
The character of the area:	The proposed signs do not contribute to excessive visual clutter as they are isolated to on single entry point along the sites southern interface. The signage is proportionate to the site context and respectfully respond to the character and amenity of the surrounding area.
Impacts on views and vistas:	The proposed signage will not impact any existing vistas or impede views to existing signs.
The relationship to the streetscape, setting or landscape	The proportions of the proposed signs are appropriate given the size of the site frontage and the limited built form surrounding the site.
The relationship to the site and building:	The proposed sign will sit parallel to the main access gate The signs will provide clear identification of the businesses in relation to the site.
The impact of structures associated with the sign:	All signs will be affixed to the fence, so no impacts will arise as a result of the sign's structure.
The impact of any illumination:	Illuminated signs are not proposed.
The impact of any logo box associated with the sign	The proposed logo box is proportionate to the overall sign.
The need for identification and the opportunities for adequate identification on the site or locality	The proposed signs are required to identify the tenants within the region. Noting the site spans seven separate but contiguous lots and is approximately 735 hectares in size. The proposed signs are critical to the function and management of the site.
The impact on road safety	The proposed signs will not impact the safety of Little River- Ripley Road as the signs are affixed to the fence, will not emit coloured lights, and cannot be mistaken for traffic control device.

7.5.4. Clause 52.17 – 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* (DELWP, 2017) as appropriate.

Native vegetation to be removed or lost

The development area consists of:

- 119 hectares of native patch vegetation comprised of EVC_VPP 55_63 Plains Grassy Woodland,EVC_VPP 68 Creekline Grassy Woodland, EVC_VPP 125 Plains Grassy Wetland, EVC_VPP 821 Tall Marsh and EVC_VPP 132_61 Heavier-soils Plains Grassland.
- 188 scattered trees (River Red-gum Eucalyptus camaldulensis, Melbourne Yellow Gum Eucalyptus leucoxylon subsp. connata, Yellow box Eucalyptus melliodora, Buloke Allocasuarina luehmannii, Grey Eucalyptus microcarpa, Manna Gum Eucalyptus viminalis) and 38 large patch trees (River Red-gum Eucalyptus camaldulensis, Melbourne Yellow Gum Eucalyptus leucoxylon subsp. connata, Yellow box Eucalyptus melliodora, Grey Box Eucalyptus microcarpa and Manna Gum Eucalyptus viminalis).
- Two threatened ecological communities including 84 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVPP) and 1.4 hectares of Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.
- Habitat for one threatened flora listed under the EPBC Act and three additional flora listed under the FFG Act.
- Habitat for 18 threatened fauna; including seven species listed under the EPBC Act and 11 species listed under the FFG Act.

The development proposes to remove 18.330 hectares of native vegetation, comprised of 14.294ha of patch vegetation,), 46 large scattered trees, 20 small live scattered trees and 4 large dead scattered trees.

In order to ensure a gain to Victoria's biodiversity that is equivalent to the loss resulting from the proposed removal of native vegetation, compensatory offsets are required. The table below provides a summary of the extent of removal and required offset.

Figure 20 Summary of DELWP Native Vegetation Removal Report

Attribute	Outcome
Location category	1 and 2
Native vegetation removal extent	18.330 hectares
Assessment pathway	Detailed
Modelled habitat for threatened species	Yes
Offset type	General
Offset amount: general habitat units	4.855 units
General offset vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Greater Geelong City Council
General offset minimum Strategic Biodiversity Value Score	0.348
Large tree attributes	54 large trees

Source: Biosis 2023

Guidelines for the removal, destruction or lopping of native vegetation

The Guidelines for the removal, destruction or lopping of native vegetation (Guidelines) is an incorporated document of all planning schemes in Victoria and therefore must be applied when a permit is required under Clause 52.17 of planning schemes.

The three-step approach (avoid, minimise, offset) is the key policy in relation to the removal of native vegetation to achieve no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. The three-step approach has been undertaken at this site and is detailed within section 5.1 of the Biosis Flora and Fauna assessment contained in Appendix H of this report. We have also further summarised and addressed this below:

Avoid the removal, destruction or lopping of native vegetation.

As shown in section 3.2.1 of this report, the proposed site layout of the solar facility demonstrates significant consideration has been given to avoiding the removal of native vegetation, including:

- **Site Selection** – A robust and lengthy approach to site selection was undertaken noting the need to avoid significant native vegetation impacts. Elgin Energy needed to find land for lease that had access to the 220KW power lines that run across the site to connect to the grid. Noting this, they started engaging with nearby landowners from 2019. At this time, they canvassed all landowners on all land adjacent to the current site boundaries (as well as the existing site boundaries). Given the large capacity available in the grid it was thought a minimum of 550ha of developable land was required to make the site economically viable. Noting land would be lost to factors such as:
  - Native Vegetation
  - Cultural Heritage
  - Land features (water ways etc)
  - Easements
  - High gradient land
  - Land unsuitable for construction (i.e. shallow rock)

  Elgin knew they would need a larger area to accommodate these constraints. Elgin Energy after engaging for 2 years with landowners secured the 7 parcels of land for this site which make up 735ha (of which only 505ha can be developed noting the above constraints). However, the developer notes that this is on the threshold of what can be considered economically viable, and this may be enough land dependent of types of panels or size of BESS that can be incorporated. These details would be known nearer to the time of construction). Elgin Energy is willing to undertake this risk to ensure the site goes into operation but achieves its net nature and environment (both ecology and in terms of carbon emissions) goals.

  Reasons nearby land was unable to be leased included:

  - Owners not interested due to seeking to sell or rezone land for future residential.
  - Surrounding Land use zoning include the Rural Conservation Zone which is reserved for preservation of plains grassland (by the Victorian government under agreement with the Commonwealth)
  - Land being land banked by overseas corporation for rezoning or land being incorporated into Melbourne Growth Areas
- Locating the project site within modified grazing and cropping land that is primarily cleared of native patch vegetation. The site is not considered to be significant land or strategically important land from an agricultural perspective. Under the current management regime (use of the land for grazing and cropping) the scatted trees and patches of native vegetation, including the threatened Plains Grassland, is likely to continue to decline.
- The design has avoided the majority of the Plains Grassland within the site and riparian vegetation along the Little River and Sandy creek. This includes the incorporation of 15m setbacks along all boundaries (including a 30m setback along the western boundary).

- Several design iterations were undertaken as knowledge of the site was improved, in particular the locations of key ecological features such as habitat for threatened species, locations of FFG Act listed trees and FFG Act and EPBC Act listed threatened ecological communities.
- The following features were prioritised for avoidance:
  - Creekline Grassy Woodland associated with Little River and Sandy Creek.
  - Remnant vegetation within the Little River-Ripley Road reserve.
  - Areas of Plains Grassy Woodland, including VQA 13 and VQA 28.
  - Plains Grassland corresponding with the definition of the EPBC Act listed threatened ecological community Natural Temperate Grassland of the Victorian Volcanic Plain and the FFG Act listed Western (Basalt) Plains Grasslands.
  - Plains Grassland where Golden Sun-moth (listed as Vulnerable under the EPBC Act) were recorded.
  - A group of scattered trees including and near the Black Falcon nest, to the south of Little River Ripley Road (directly south-east of VQA 31).
  - A further revised design seeks further avoidance by removing the installation of solar panels immediately south-east of the ecological corridor in order to preserve a greater number of scattered trees. These trees have been prioritised for retention, as they assist in improving connectivity and the area of remnant vegetation along Sandy Creek. Following further consultation with DEECA on the 15th December 2022 the design has been modified In the design reducing loss of scattered trees to 70 trees and patch reduced to 5 trees. This equates to 33% of all the trees mapped within the study area (reduced from 47% of all the trees originally proposed in design irritation 3).
- Patches of native vegetation (16.34ha) proposed to be removed has been deliberately targeted to be patches of poor quality vegetation and avoid any areas of medium to high quality vegetation or areas. The poor quality areas have degraded due to farming practices across the land. It is anticipated that these areas being under solar panels would not necessarily be lost due to the nature of the panels construction and as evidenced on other solar farms across Australia the patches of plains grassland can actually thrive and recover under the solar panels providing an increase to the biodiversity condition of these areas providing a net increase in native vegetation due to these areas being under development.
- Current land use, and ongoing management in the absence of the solar development were also considerations in the design. Most remnant grasslands within the study area were located in areas unsuitable for cultivation, including rocky areas, or low-lying seasonally wet areas. None of these areas are currently managed for protection of biodiversity values. All areas are subject impacts from adjacent land, including grazing by stock and weed infestations. High threat weeds are common throughout the study area, and pose a major risk to the ongoing viability of biodiversity values within grassland areas, unless there is a change to the management regime. The following species are of particular concern.
  - Serrated Tussock Nassella trichotoma
  - Chilean Needle-grass Nassella neesiana
  - Cane Needle-grass Nassella hyalina
  - Galenia Aizoon pubescens
  - Cape Weed Arctotheca calendula
  - Saffron Thistle Carthamus lanatus
  - Boneseed Chrysanthemoides monilifera
  - African Box-thorn Lycium ferocissimum
  - Horehound Marrubium vulgare
  - Tiger Pear Opuntia aurantiaca

Minimise

Considering the preliminary results of the Flora and Fauna Assessment the solar farm layout has significantly altered and reduced the amount of native vegetation that has to be removed, with particular focus on preserving and relocating endangered species and habitats identified in the assessment.

We note the site is currently used for medium to heavy agricultural practices which can be considered to be equally detrimental to the surrounding native vegetation and ecosystem. This is particularly relevant to patches of Plains Grassland on the site which are considered to be in relatively poor condition due to existing land use and management practices.

Large scale land use changes and the removal of native vegetation such as this would commonly lead to negative impacts upon some species through altering or degrading habitat. However, in agricultural landscapes, which are often intensively managed and species-poor, there is potential for benefits if deployed and managed strategically. The nature of construction for this land use is considered to be low impact, avoiding heavy duty foundations and disturbance to the land. The mounting frames are pile driven into the ground, and no concrete foundations are required causing minimal ground disturbance, which significantly reduces environmental impacts in comparison to other built form development. This leads to opportunities for regenerative land management which revitalizes soils, restores grassland ecosystems and increases biodiversity while maintain light agricultural production as described in 5.2.3.

Measures to minimise the amenity and environmental impacts during the construction, operation and decommissioning of the solar energy facility will be addressed in the preparation of management plans (EMP) and relevant subplans in accordance with the solar energy facilities design and development guidelines. Specifically appropriate sediment control measures to ensure run-off during construction does not impact potential habitat for threatened species Growling Grass Frog and Yarra Pygmy Perch.

Additionally, where possible primary access to the site has been confined to existing access points to the property where native vegetation does not exist.

Given all the design amendments and targeted vegetation enhancements to the site including a thorough approach to site selection and design, there is no feasible opportunities to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal. Any further reduction in development area would render the project economically unviable and the project would not be able to proceed.

Offset

In order to compensate for the loss to biodiversity from the removal of native vegetation offsets are required.

The applicant intends to satisfy additional offset requirements through the purchase native vegetation credits through the offset register and/or first party offsets from areas underdeveloped on the land such as the area north of Little River (1PS/434520)

Furthermore, as a secondary measure (although not registered as an official first party offset) Elgin Energy is prepared to preserve and rehabilitate a large ecological corridor of native vegetation, riparian habitats and grassland associated with the Little River and Sandy Creek catchments. This is located within the site and indicated on the site plan (Elgin Energy, February 2023) (See Appendix C). This could also potentially provide for significant onsite offset areas. This area (potentially up to 40ha) could provide opportunity for onsite rehabilitation/conservation including revegetation of site appropriate species and relocation of native habitats (i.e dead trees and creation of hollows) for beneficial biodiversity outcomes. Combined with the environmental benefits of green energy generation, the Project represents a significant net environmental positive to the State.

Key actions would include weed control, biomass management and potentially seeding with locally sourced seed to improve native herb cover and diversity and to extend/join the grassland patches into previously disturbed areas as recommended in the flora and Fauna assessment.

7.5.5. Clause 53.13 – Renewable Energy Facility (Other than Wind Energy Facility)

This clause applies to land used, developed and proposed to be used and developed for a renewable energy facility. The clause outlines application requirements for a renewable energy facility which must be complied with in respect to this proposal (refer to Table 15 below).

Assessment against Clause 53.13

Before deciding on an application, in addition to the decision guidelines of Clause 65, the responsible authority must consider, as appropriate the following:

Table 16 Application Requirements and Decision Guidelines under Clause 53.13

Section	Application Requirement	Response
A site and context analysis	▪ 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.	▪ A site layout is provided at Appendix C. Refer to Table and Figure 1 and Figure 2 for aerial maps and photographs identifying the site location and the surroundings, including the nearest electricity substation and site access road. The proposed development has been carefully sited to consider the environmental and amenity impacts that it may have on the site and surrounding area.
Design Response	▪ Details plans of the proposed installation 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. ▪ Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points. ▪ The extent of vegetation removal and a rehabilitation plan for the site.	▪ Site layout plans and elevations are provided at Appendix C and Appendix D. Refer to section 3.2 of this report for equipment specification details and photographs. ▪ Photo simulations and a Landscape and Visual Impact Assessment (Urbis, September 2022) are provided at Appendix L of this report. ▪ Details of the required vegetation removal and the offsets and revegetation proposed is provided in section 8.3. Refer to Appendix H for the Flora and Fauna Assessment (Biosis, February2023).
Written Report and Assessment	▪ An explanation of how the proposed design derives from and 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. ▪ Whether a Works Approval or License is 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. ▪ The effect of traffic to be generated on roads ▪ The impact upon Aboriginal or non-Aboriginal cultural heritage. ▪ The impact of the proposal on any species listed under the Flora and Fauna Guarantee Act 1988 or	▪ Refer to section 3.2.1 for details of the development of the site layout. ▪ The proposed installation is a solar energy facility. Materials will not be stored at the site and no waste will be produced. ▪ At this stage there is no requirement for a Works Approval or License from the Environmental Protection Authority for the works. ▪ Amenity has been assessed and considered, including in terms of: – Noise (refer to section 8.11) – Traffic (refer to section 8.4) – Visual impact and glare glint and glare (refer to section 8.5) It is concluded that there would be little to no impacts upon the area from any of the above matters ▪ A traffic impact assessment (Urbis, September 2022) has been undertaken and it concludes

Section	Application Requirement	Response
	Environment Protection and Biodiversity Conservation Act 1999. ▪ A statement of why the site is suitable for a renewable energy facility including, a calculation of the greenhouse benefits. ▪ An environmental management plan including, a construction management plan, any rehabilitation and monitoring.	that traffic from the proposal will have a negligible impact on the surrounding road network during the operation stage. ▪ An Aboriginal and historical cultural heritage assessment has been undertaken (refer to Appendix Q and Appendix I). Based on the results of the desktop research and site survey, there are a number of historical or post-contact heritage places located within the study area. The recommendations of the CHMP will be undertaken. ▪ The presence of listed species is provided in the report in Appendix H and is detailed in the flora and fauna assessment (Biosis, February 2023) (section 8.3) and any mitigation measures included as part of the proposal. ▪ The site is suitable as it can continue to function as agricultural land and no significant impacts would be caused to the environment or the community. It is estimated that the proposed installation would generate enough megawatt hours of electricity per year to provide electricity to power the equivalent of approximately 98,000 homes annually. This equates to saving 400,000 tonnes of carbon emissions, the equivalent of taking over 86,956 petrol engine cars off the road. Evidently, this project will contribute to Victoria's target for 50% of our electricity to come from renewable sources by 2030. ▪ An environmental management plan and construction management plan will be provided before the commencement of construction.

Before deciding on an application, in addition to the decision guidelines of Clause 65, the responsible authority must consider as appropriate the following decision guidelines of Clause 53.13-3:

Section	Decision Guideline	Response
Decision Guidelines	▪ 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 proposed development will comply and assist in implementing the relevant state and local planning policies. Refer to section 7.1 for further information regarding policy appraisal. ▪ The proposed development will not impact the surrounding area in respect to noise, glint, light spill, vibration, smell or electromagnetic interference. ▪ No noise will be emitted by the operational solar panels, however the batteries and inverters will generate some noise (at or below the levels in EPA Victoria's Noise from industry in regional Victoria guideline - NIRV). Solar is a passive technology, and therefore the panels produce electricity silently. Although, the

Section	Decision Guideline	Response
	▪ 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).	inverters, transformers and storage units located within the BESS (Battery Energy Storage System) would create some noise, and are characterised as primary noise sources for the solar farm. This equipment is positioned in towards the southern end of the site. An Acoustic Assessment conducted by NDY (February2023) details that the proposal is compliant with NIRV limits and therefore will not impact the surrounding area. Refer to Appendix M for further information. ▪ Glint: The solar panels are designed to absorb light rather than reflect it with the blue coating designed to absorb the light most efficiently. The dark, non-reflective nature of the solar array is generally considered to help minimise their visual contrast with the surrounding landscape. A glare and glint assessment undertaken by Urbis concludes the potential impact from reflection or glare is considered to be low (See Appendix L, LVIA). Mitigation recommendations including tilting the solar panels, a flat topography with no opportunities for overlooking and proposed screen planting around the perimeter of the project will mitigate any impact on surrounding areas. The assessment can be found at Appendix L of this report. ▪ Light spill will not be an issue, as there is no requirement for operational lighting, and the site will not be lit at night. Some components may have external security lights, however these are only used for urgent maintenance works during ours of darkness and are not permanently illuminated. Refer to section 4.3.1 of the Landscape and Visual Impact Assessment (Urbis, September 2022) at Appendix L for further details of lighting impacts on site. ▪ Considering the construction methods and the size of the site, vibration is unlikely to be an issue. This can be addressed further in a construction management plan. ▪ No odours will be produced by the facility. ▪ The facility would produce only low levels of electromagnetic energy associated with electrical equipment and in accordance with Australian Standards. There are residences adjoining to the west of the site but will all be EME compliant with the relevant ARPANSA Standard. Therefore, potential impacts from the listed aspects are reduced. ▪ The proposed installation will cause a low level of visual impact and measures have been taken to limit impacts. This is primarily due to

Section	Decision Guideline	Response
		the limited number of sensitive viewpoints and the relative lack of visibility resulting from existing vegetation throughout the landscape and rising topography. Photovoltaic panels have been designed to be set back a minimum of 15 metres from site boundaries, with specified areas setback up to 30 and 50 metres such as along waterways and on the eastern boundary of the site. Refer to section 8.5 and Appendix L (Landscape and Visual Impact Assessment) (September 2022) for further information. ▪ The Agricultural Assessment produced by Ag-Challenge Consulting (March 2022) describes the land as not to be considered as significant or strategically important from an agricultural perspective. Section 4.2 of the Agricultural Impact Assessment outlines that the land is not within a declared irrigation district. This assessment can be found at Appendix J of this report. ▪ Impacts of the proposal on the natural environment and natural systems have been investigated and it is concluded that no significant impacts will occur, or measures have been taken to offset impacts. Refer to the following sections of this report for further information: ▪ Refer to section 8.3 for biodiversity matters for consideration. ▪ Refer to section 8.7 for bushfire matters for consideration. ▪ Refer to section 8.10 for geology, soil and water quality and hydrology matters for consideration. ▪ The Traffic Impact Assessment (TIA) detailed in Appendix N (Urbis, September 2022) of this report outlines that the development proposal will have negligible impact on the surrounding road network during the operation stage. ▪ The proposed development will comply with the Solar Energy Facilities Design and Development Guidelines (DELWP, 2019). A detailed assessment of this relevant legislation in relation to the proposal is provided in section 6.7 of this report.

7.5.6. Clause 65 – Decision Guidelines

Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

Table 17 Approval of an Application or Plan under Clause 65.01

Decision Guideline	Response
The matters set out in section 60 of the Act.	The Minister for Planning will assess this application with regard to the matters listed in section 60 of the Act.
Any significant effects the environment, including the contamination of land, may have on the use or development.	Impacts of the proposal on the natural environment and natural systems have been investigated and it is concluded that no significant impacts will occur, or measures have been taken to offset impacts. Refer to the following sections of this report for further information: ▪ Refer to section 8.3 for biodiversity matters for consideration. ▪ Refer to section 8.7 for bushfire matters for consideration. ▪ Refer to section 8.10 for geology, soil and water quality and hydrology matters for consideration.
The Municipal Planning Strategy and the Planning Policy Framework.	The proposal aligns with the Planning Policy Framework and the Greater Geelong Planning scheme, detailed at section 5.2 and 5.4 of this report.
The purpose of the zone, overlay or other provision.	There are no conflicts between the proposal and the purposes of the zone or any overlay or other provision. Refer to section 5.1 of this report for further information.
Any matter required to be considered in the zone, overlay or other provision.	There are no conflicts between the proposal and any matter required to be considered of the zone or any overlay or other provision. Refer to section 5.1 of this report for further information.
The orderly planning of the area.	The proposed installation is a suitable use of the land. It allows agricultural use to continue alongside a complimentary use, renewable energy production.
The effect on the environment, human health and amenity of the area.	Amenity has been assessed and considered, including in terms of: ▪ Noise (refer to section 8.11) ▪ Traffic and access (refer to section 8.4) ▪ Visual impacts (refer to section 8.5) It is concluded that there would be no impacts upon the area from any of the above matters.

Decision Guideline	Response
The proximity of the land to any public land.	The site borders Little River to the north, which is a part of Crown Land. The associated roads adjacent to the site (Little River-Ripley Road and Mount Rothwell Road) are council-owned roads.
Factors likely to cause or contribute to land degradation, salinity or reduce water quality.	The land will remain vegetated, the development does not require water use and does not produce water. Therefore, there would be no degradation, salinity or a reduction in water quality.
Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.	Stormwater conditions will remain unchanged – the surface topography will not change. Refer to Appendix K for further details.
The extent and character of native vegetation and the likelihood of its destruction.	Although vegetation removal is required onsite, the proposed installations will not have a significant impact on the ecology of the of the site or surrounding area. Further detail on native vegetation protection is contained at section 8.3 of this report, as well as Appendix H.
Whether native vegetation is to be or can be protected, planted or allowed to regenerate.	In order to achieve the objective of 'no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation', the applicant has undertaken or committed to a number of measures to protect the existing ecology of the site by avoiding, minimising and offsetting impacts in accordance with Victoria's guidelines for the removal, destruction or lopping of native vegetation. These measures are explained in detail at section 8.3 of this report. The Cultural Interpretation and Ecological Corridor section outlined in the Site Plan (October, 2022) runs through the site from the southwest to the northeast. This potential section of re-vegetation area could be up to approximately 40 hectares in size and would provide a diverse range of native vegetation. The Site Plan can be found at Appendix C of this report.
The degree of flood, erosion or 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.	**Flood:** Flood modelling has shown that there is the potential for flood impacts to the proposed Barwon Solar Farm. The proposed solar panels are elevated and will not impact upon surface run off. Other equipment installed on the ground will have a small surface area and have been designed and sited to reduce any significant impact, particularly the BESS. Appropriate drainage infrastructure is also proposed to prevent damage through erosion

Decision Guideline	Response
	or runoff. Details regarding this can be found in the Hydrology Assessment included at Appendix K of this report. **Erosion:** From a velocity point of view velocities across the site tend to be low (< 0.5 m/s) and below the threshold (< 2 m/s) where rock armouring to protect waterways and features is required. Some isolated higher velocities (> 1 m/s) occur through the overland flow path/waterway through the middle of the site and at other isolated locations under the current conditions. Should erosion form at these locations then erosion mitigation strategies will be implemented. Details regarding this can be found in the Hydrology Assessment included at Appendix K of this report. **Fire:** The risk of a major fire spreading to and from the solar farm is very low, based on the low likelihood of ignition, good suppression opportunities, impedances to fire development and spread (i.e. fuel breaks and reduced fuel areas). Despite the low likelihood of bushfire impact, the risk still warrants mitigation measures, including: ▪ Separation zones of at least 6m between solar panels ▪ Access tracks are within the 10m firebreak on the site perimeter ▪ 7 x water tanks (45,000 litres) will be on site ▪ 5 access points provided, up to 7m wide to accommodate fire trucks Refer to section 8.7 and Appendix O of this report for bushfire impacts.
The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.	No loading and unloading facilities are required. Appropriate measures will be implemented during the construction phase and which will be detailed in a construction management plan.

8. MATTERS FOR CONSIDERATION

The proposed installation has been assessed in accordance with the state and local planning policies and planning controls applicable to the site contained within the Greater Geelong planning scheme.

Below is an assessment of the development and its construction and operational impacts with reference to the assessment against the policies and controls from the planning scheme contained within section 5 of this report.

8.1. GRID CONNECTION

The project will connect to the grid via the existing Geelong Terminal to Keilor Terminal 220 kV powerline which passes through the southwest corner of the development site. Due to the network strength at this location, a Full System Strength Impact Assessment is not required according to AEMO.

Connections to the grid will be via a single power pole cable located in the substation compound. Therefore, no new external transmission infrastructure is envisaged to facilitate the connection to the grid.

8.2. POTENTIAL LOSS OF AGRICULTURAL LAND

An Agricultural Assessment has been prepared by A.J Pitt (March 2022), this report concludes the subject land is neither highly productive nor highly versatile. It is not considered to be significant land or strategically important land from an agricultural perspective. The impact on local and regional productivity is estimated to be a loss of a little less than 1% of the dryland cropping land within the Geelong statistical area as defined by the Australian Bureau of Statistics.

Overall, the combined land parcel is determined to have a Land Capability rating of 3 with the limiting attributes being the imperfect drainage, shallow rooting depth, poor aggregate stability, and presence of surface rock. The land can be described as fair quality land for grazing and for broad acre cropping, but it has no special values. It is currently part of the expansive land resource that supports the grazing and broad acre cropping districts of the Werribee Plains west of Melbourne.

The proposed change of primary land use to solar energy productions will mean the current agricultural versatility (cropping or grazing) will be lost in favour of an alternate use. The design of the solar farm however, will enable sheep to be grazed underneath the solar panels, thus retaining some of the current level of agricultural productivity. 225 hectares of land will not be developed, rather utilised this purpose. Of this land, potentially up to 40 hectares could be utilised for revegetation. Agricultural productivity will be reduced rather than lost.

Properties neighbouring the site are in various forms of agriculture use and operate as separate stand-alone enterprises. No interdependence between the existing agriculture use of the Project Site and these adjoining properties has been identified.

Overall the removal of up to 505 hectares from cropping use should not result in any discernible negative impacts on the agricultural use of the adjacent properties. Impacts to the agricultural amenity of the broader shire and the Greater Geelong region are not considered to be significant.

8.3. BIODIVERSITY

Biosis was engaged to undertake a Flora and Fauna assessment (February 2023) of the subject site and its surrounding context. The ecological value identified within the study area are as follows:

- 119 hectares of native patch vegetation comprised of EVC 55_63 Plains Grassy Woodland, EVC 68Creekline Grassy Woodland, EVC 125 Plains Grassy Wetland, EVC 821 Tall Marsh and EVC 132_61Heavier-soils Plains Grassland.
- 187 scattered trees (River Red-gum *Eucalyptus camaldulensis,* Melbourne Yellow Gum *Eucalyptus leucoxylon* subsp. *connata*, Yellow box *Eucalyptus melliodora,* Buloke *Allocasuarina luehmannii,* Grey Box *Eucalyptus microcarpa,* Manna Gum *Eucalyptus viminalis*) and 38 large patch trees (River Red-gum *Eucalyptus camaldulensis,* Melbourne Yellow Gum *Eucalyptus leucoxylon* subsp. *connata*, Yellow box *Eucalyptus melliodora,* Grey Box *Eucalyptus microcarpa* and Manna Gum *Eucalyptus viminalis*).

- Two threatened ecological communities including 92 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVPP) and 1.4 hectares of Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.
- Habitat for one threatened flora listed under the EPBC Act and three additional flora listed under the FFG Act.
- Habitat for 18 threatened fauna; including seven species listed under the EPBC Act and 11 species listed under the FFG Act.
- On balance the proposal has considered preliminary results of this assessment and amending the solar farm layout so as to avoid impacts to patch vegetation and scattered trees, where possible.

Spatial data (shapefiles) of proposed vegetation removal were submitted to DELWP's native vegetation support team, who provided a Native Vegetation Removal Report for the project. Based on the current design, the proposed development will require the removal of 18.330 hectares of native vegetation, comprised of14.294 ha of patch vegetation (which includes 5 trees one of which is dead) and 70 scattered trees (of which only 46 are large and require an offset (also noting 4 of the 46 large trees are dead).

In order to achieve the objective of 'no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation', the applicant has undertaken or committed to a number of measures to protect the existing ecology of the site by avoiding, minimising and offsetting impacts in accordance with Victoria's guidelines for the removal, destruction or lopping of native vegetation. These include:

- Locating the project within modified grazing and cropland that is primarily cleared of native patch vegetation. Under the current management regime (use of the land for grazing and cropping) the scatted trees and patches of native vegetation, including the threatened Plains Grassland, is likely to continue to decline.
- Considering the preliminary results of the Flora and Fauna Assessment (September 2022) the solar farm layout has been significantly altered and reduced to avoid impact to native vegetation. The design has avoided the majority of the Plains grassland within the site and riparian vegetation along the Little River and Sandy creek. The design was again modified in January-February 2023, in response to consultation with DEECA (including the DEECA RFI to the Planning Permit Application). This included:
  - Contraction of the panel area in the cropping paddock to the south of Sandy Creek (north of Little River – Ripley Road), prioritising 11trees for retention, as they assist in improving connectivity and the area of remnant vegetation along Sandy Creek.
  - Alterations to the layout to the south of Little River – Ripley Road, resulting in the avoidance of 2 individual scattered trees, as listed below:
  - Alterations to the panel layout and location of fencing and access tracks in the south-east of the project area, avoiding the removal of 14 scattered trees and patch vegetation (5 trees)
  - Total number of trees retained by the design amendments total 31 trees.
- Primary access to the site has been confined to existing access points to the property where native vegetation does not exist.
- Preparation of management plans (EMP) and relevant subplans in accordance with the solar energy facilities design and development guidelines. Specifically appropriate sediment control measures to ensure run-off during construction does not impact potential habitat for threatened species Growling Grass Frog and Yarra Pygmy Perch.
- Preservation of large areas of native vegetation, riparian habitats and grassland associated with the Little River and Sandy Creek catchments within the site. The site can potentially include an ecological corridor of approximately up to 40 hectares running north to southwest through the site for onsite offsets. This area provides opportunity onsite rehabilitation/conservation including revegetation of site appropriate species and relocation of native habitats for beneficial biodiversity outcomes.
- Purchase of native vegetation credits through the offset register to offset the native vegetation proposed for removal.

In summary, although vegetation removal is required onsite, the proposed installations will not have a significant impact on the ecology of the of the site or surrounding area. The reduction in intensive agricultural

practices (grazing and cropping) on the site supported by environmental site management and preservation of large conservation areas will more than likely increase the biological diversity of the area and eventually result in the creation of approximately double the amounts of vegetation proposed to be removed.

8.4. TRAFFIC AND ACCESS

As stated previously, there are six proposed access points, which will be used to service the site, five of which will be from Little River Ripley Road, the sixth is accessed from Mt Rothwell Road. The access from Mt Rothwell Road is the access that will be used to access the battery storage system and the substation for operation and maintenance purposes.

The access point which is used on a day-to-day basis will vary based on the type of work that is being undertaken at the site on that specific day and will be at the discretion of the service vehicle operator. All of the entry points will be designed to a minimum standard utilising the Department of Transport and Planning Typical Access to Ruiral Properties design accommodating access for b-double trucks and CFA firefighting vehicles.

There are several roads located within the site. They are broken down typically by their function. These functions are:

- Site ring road (enabling access to all parts of the site).
- Internal access way (the primary function of servicing the panels).

As stated in the Traffic Impact Assessment (TIA), Trip generation during the operation Phase will amount to no more than two vehicle trips per day. Access to the site is required to perform cleaning and servicing activities. Given that a maximum of two vehicle trips will be generated by the site on a daily basis, a negligible traffic impact of the development on the surrounding road network is expected.

There is no onsite carparking proposed for vehicles accessing the site. While the facility is to operate 24 hours a day seven days a week, there is only expected to be one staff member on site during the day (between 9 AM and 5 PM) to carry out routine maintenance and cleaning. It is anticipated that a minimum of two vehicles will access the site on a daily basis to carry our routine maintenance and cleaning.

Vehicles will pull over on one of the internal services road to carry out this routine maintenance. This is deemed acceptable given the expected trip generation is limited to two vehicles per day during the operational phase and vehicles will not be blocking any traffic on the internal road network.

During the peak construction stage of the development, approximately 20 vehicles will access the site per hour. Vehicles accessing the site for construction purposes will likely do so from the north of Bacchus Marsh Road before turning left into Little River Ripley Road. A Construction Traffic Management Plan will be prepared prior to the issue of a Construction Certificate, detailing the construction trip generation levels, the haulage routes and the appropriate operational measures to mitigate any traffic impacts.

Please refer to the provided TIA at Appendix N further detail regarding traffic generation, access and parking.

8.5. VISUAL IMPACT

A Visual Impact Assessment has been undertaken and is included in Appendix L. The Visual Impact Assessment concludes that from ground viewing locations, only localised changes will occur. Due to the typically low-profile form of the proposed installation, the detailed assessment of viewpoints is confined to sensitive locations within 1.5 km of the site, the area within which the proposed installation will be most visible.

The most visible changes to the landscape character of the existing setting will result to views from three adjacent residences. However, following amelioration, comprised of the establishment of locally indigenous screening vegetation along the Project boundaries, the landscape character will appear similar to the remainder of the regional agricultural landscape and other bands of vegetation that occur through the landscape of the region.

The landscape of the Project setting has a generally high landscape absorptive capacity, as the flat topography does not allow for significant overlooking and the scattered, and occasionally dense vegetation in the area surrounding the Project, provides visual screening, with the extent of screening increasing with distance from the Project.

Prior to amelioration, three sensitive uses proximate to the Project will result in high levels of impact. These areas:

- VP2 – Mt Rothwell Estate residence – High visual impact.
- VP3 –Residence at 1375 Little River-Ripley Road - Moderate to high visual impact.
- VP4 – Residence at 1340 Little River-Ripley Road - Moderate to high visual impact.

Apart from the above, overall, the Project is assessed as having a low level of visual impact on surrounding sensitive viewpoints, primarily due to the limited number of sensitive viewpoints and the relative lack of visibility resulting from existing vegetation throughout the landscape and rising topography. The residual visual impact will typically reduce to very low after the establishment of amelioration measures.

8.5.1. Glint and Glare

A Glint & Glare assessment has been prepared by Urbis and identifies that there will be no impacts to road users and residents in close proximity the Project (refer to Landscape and Visual Impact Assessment at Appendix L) (September 2022). As a result, there would also be no interference expected for viewpoints located at greater distances from the project site.

Given the tilting solar panels, the flat topography with limited opportunities for overlooking of the Project, the potential for impact resulting from reflection or glare is considered to be low.

Furthermore, risk of glare and glint for road users, and surrounding residences by proposed perimeter buffer landscaping which, once established, will ensure that surfaces of the panels are not visible, screening any reflections that would have occurred across the flat terrain. The area to the north of the site is a significant wetland with no residences or transport corridors to be assessed for glare and glint.

8.6. LANDSCAPING

A Landscape strategy has been prepared by Urbis Pty Ltd (February 2023) to support the amelioration recommendations of a preliminary Landscape Visual Impact Assessment (LVIA). An agricultural type stockproof fence will be installed around the boundary of the site, with a 2.3 m high security fence set 5 metres to the inside of it. The 5 m space between the fences will enable the establishment of a buffer planting zone to screen the Proposal from surrounding sensitive viewpoints.

Figure 21 Visual Assessment

Source: Urbis 2022

Planting along the western and eastern boundaries, as well sections of the boundaries adjacent to Little River-Ripley Road, will mitigate impacts to VP2, VP3 and VP4, receptors with the highest levels of visual impact as seen in Figure 21 above.

The Project has been set back from VP2. Additionally, the planting has also been set back from the property boundary to allow for foreground views and with species selected to ensure that the Project is screened, while maintaining views over the Project to the distant Brisbane ranges.

The Project and screen planting have been set back from VP4 to allow for foreground views. The low-profile form of the majority of the Project, primarily the solar array, which is approximately 2.4 m in height at full tilt, will ensure that planting will be able to provide screening within a relatively short period of time.

Given the location of the Project between the foothills of the You Yangs and the Little River, the plant species have been drawn from a number of EVC's and Council plant lists.

8.7. BUSHFIRE PRONE LAND AND FIRE RISKS

The proposed development is partly located in the Bushfire Management Overlay, as shown in the planning scheme and therefore risk needs to be addressed.

The overall bushfire risk to the site is considered low, given the background hazard context and landscape risk profile, its siting, construction, design and mitigation strategies. In addition, the solar farm is not expected to result in a noticeable increase in fire risk in the locality and to downwind assets and values. The facility is considered to be appropriate within the identified low risk fire environment, and mitigation strategies proposed are compliant with the CFA Design Guideline requirements.

Urbis engaged Ecological Australia to produce a Fire Risk Assessment (April 2023) for the proposal and site. The assessment clearly demonstrates compliance with both Section 5.3 of the CFA Design Guidelines and Model Requirements for Renewable Energy Facilities (2019), we well as the relevant aims, objectives and principles covered in the Guidelines. Mitigation strategies for the proposed development, outlined below, will provide an appropriate level of risk reduction for the solar farm, as well as significantly lower the risk of impacts to life, property, agricultural and environmental assets.

In line with the CFA Guidelines the following measures will be in place on site:

- An emergency management plan will be developed and made available on site.
- Emergency management information will be available at the 5 main access gates to the site, and safety and advisory signage will be available onsite.
- Primary solar panel banks are separated throughout the solar farm facility by perimeter/internal access roads and/or fire breaks that equal or exceed 6m.
- 7 non-combustible static water supply tanks have been proposed, each 45,000 litres, containing a total of up to 270,000L dedicated to firefighting. These will be located by the entrances to the site along Little River-Ripley Road.
- Roads are to a minimum of 4m wide with established firebreaks and 4m vertical clearance of vegetation. Access tracks are within 10m of the fire break on the site perimeter and will be oriented to the panel side of the firebreak.
- Perimeter bays will be included around the entire perimeter of the site, and around BESS infrastructure.
- Passing bays will be available every 600m and be 20m long, with a width of 2m to create a total minimum traffic width of 6m.
- The required minimum of 2 access points will be exceeded. 7 access points are provided in and out of the facility, all up to 7m wide to accommodate fire trucks and other emergency vehicles. The access points are located at:
  - 4 points north of Little River – Ripley Road
  - 2 points south of Little River – Ripley Road
  - 1 point on Mount Rothwell Road
- The carrying capacity of roads will be up to 15 tonnes for fire fighting vehicles.
- A perimeter fire break of 10m wide to mineral earth is to be created and maintained around the BESS compound. All fire breaks will be maintained to mineral earth through the application of herbicides. Elsewhere throughout the site will be maintained to a height no greater than 100mm through slashing or grazing.
- Proposed planning of screening vegetation including trees and hedges are considered low flammability vegetation and are discontinuous in nature.

In line with the CFA Guidelines the following measures for the BESS will be in place on site:

- A mineral earth fire break to a width of 10m is proposed around the entire perimeter of the BESS compound and facility perimeter, reducing the impact of potential bushfire or grassfire spread.
- A 6m wide ring road (with 2m wide passing bays) is provide around BESS compound and Customer Substation.
- The BESS is located 260m from the south-east site entrance off Mount-Rothwell Road, suitable for emergency vehicles.
- The potential for fires in BESS units is mitigated by being housed within fully enclosed non-combustible container modules, along with monitoring, safety and coolant fire suppression systems. This will mitigate the propagation of fire escape (together with adjoining fire breaks) both on and off site, should thermal battery runaway occur.
- All BESS units will be built on concrete foundations, include an inbuilt Solbank cooling, fire monitoring and detection system and suitable ember protection systems, ventilation systems, permitter barrier impact protection and spill containment.
- All cabling within the BESS containers will be enclosed underground to the Customer Substation.

A copy of the Fire Risk Assessment (Ecological Australia, September 2022) is detailed at Appendix O of this report.

8.8. HERITAGE AND CHARACTER

The most visible changes to the landscape character of the existing setting will result to views from three adjacent residences. However, following amelioration, comprised of the establishment of locally indigenous screening vegetation along the Project boundaries, the landscape character will appear similar to the remainder of the regional agricultural landscape and other bands of vegetation that occur through the landscape of the region

The landscape of the Project setting has a generally high landscape absorptive capacity, as the flat topography does not allow for significant overlooking and the scattered, and occasionally dense vegetation in the area surrounding the Project. Screen planting will differ according to locations around the site, while still respecting the site's unique existing character and form.

8.9. ABORIGINAL CULTURAL SIGNIFICANCE

The relevant Traditional Owner Group (TOG) or registered Aboriginal Party (RAP) of the land included within the subject site is the Wadawurrung Traditional Owner Aboriginal Corporation (WTOAC).

Initial conversations were held in early and mid-2020 and subsequent RAP meetings have occurred as part of an inception meeting and to present the desktop findings.

The Aboriginal cultural heritage desktop assessment (Ecological Australia, March 2022) of the activity area was prepared pursuant to regulation 61 and clause 8(1), Schedule 2 of the Aboriginal Heritage Regulations 2018 (Vic) (the Regulations) and is contained at Appendix Q.

The aims of the desktop assessment were to assess:

- The level of previous investigation of the activity area and the wider geographic region.
- Evidence for the presence of registered Aboriginal cultural heritage places within the activity area.
- The environmental context of the activity area with regard to landform, geomorphology and geology, and the vegetation which would have characterised the area prior to European contact.
- Historical and ethnohistorical evidence for the presence of Aboriginal people in the activity area and geographic region.
- Evidence for the presence of intangible Aboriginal cultural heritage values that may be present in or associated with the activity area, and which may be impacted by the activity.
- Prior use of the activity area, especially regarding evidence of prior disturbance to ground surfaces and subsurface deposits.

The findings of the desktop assessment indicate that it is *reasonably possible* for Aboriginal cultural heritage to be present within the site, which resulted in the requirement that the CHMP progress to a standard assessment ground survey under Regulation 7 of the Aboriginal Heritage Regulations 2018.

Elgin Energy then engaged the services of Ecological Australia (ELA) to produce a Cultural Heritage Standard Assessment (October 2022). A field survey was undertaken from 15th to 25th March 2022 by three archaeologists and three WTOAC representatives.

The results of the Standard Assessment concluded:

- The activity area contains nine separate Investigation Areas (IAs) based on the presence of the various landforms.
- 839 stone artefacts.
- 3 scarred trees.
- No caves, cave entrances or rock shelters were identified.
- Artefacts are concentrated along watercourses – Primarily Little River and Sandy Creek.
- High densities along sections of Little River.
- Concentrations on granite hills section in southern portion of the activity area.

A meeting between the project team and WTOAC was held on 13th September 2022 to discuss the Standard Assessment results and the Complex Assessment methodology. The methodology has been confirmed and fieldwork is expected to be undertaken mid-2023. The levels of testing have been agreed based upon the results of the Standard Assessment and noting that WTOAC have not previously been involved in a CHMP for a solar farm development.

The permit application and development will comply with the recommendations and mitigation measures provided in each of these reports to ensure protection of aboriginal cultural heritage continues during construction and operation of the facility.

8.10. GEOLOGY, SOIL, WATER QUALITY AND HYDROLOGY

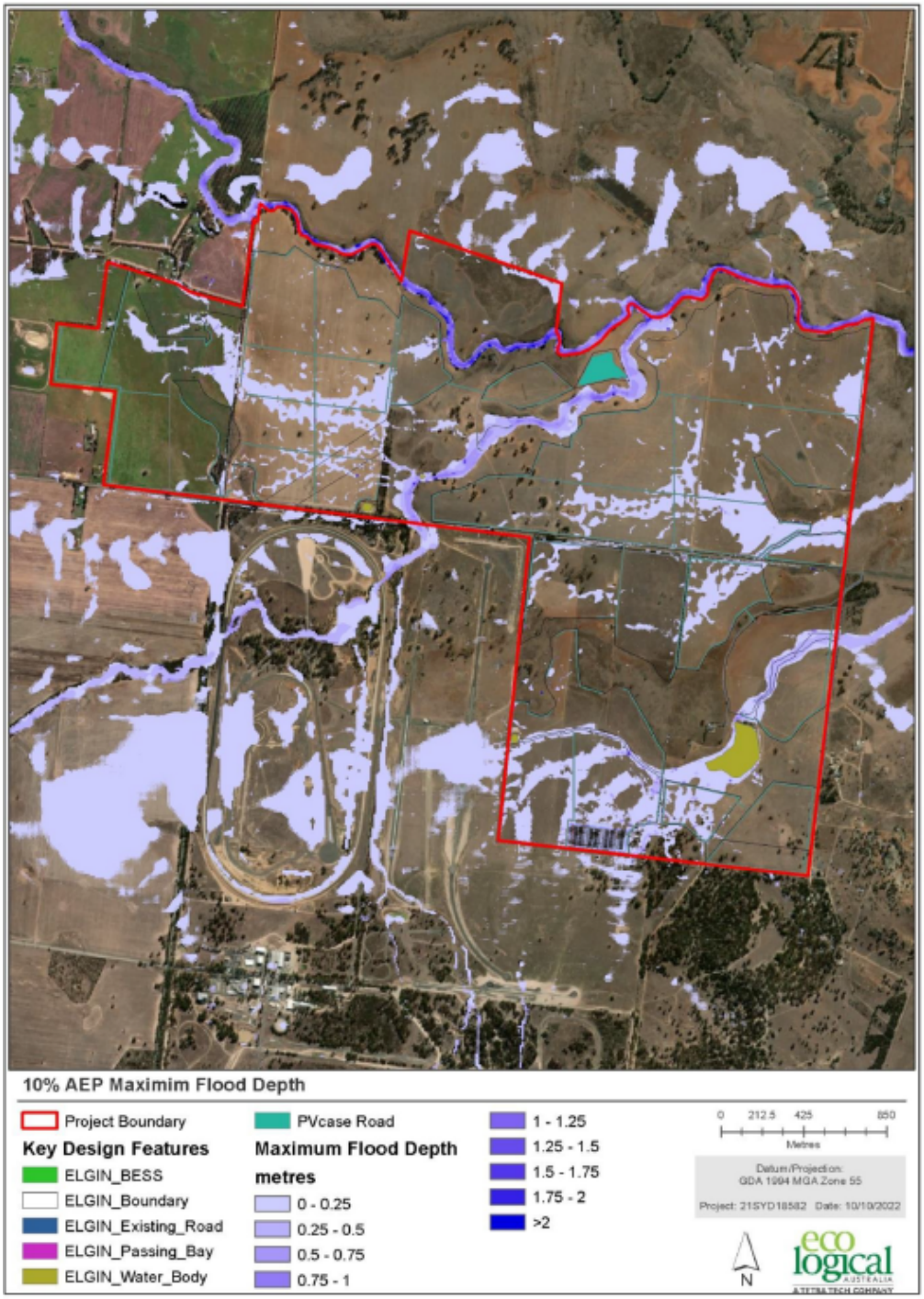
Urbis, with support from Elgin Energy, engaged Ecological Australia to produce a hydrology assessment (September 2022) for the Barwon Solar Farm proposal. The report assesses hydrological conditions associated with the existing and proposed conditions under 10%, 5%, 2%, 1%, 0.5%, 0.2% and 0.1% Annual Exceedance Probability (AEP) flood events for the proposed site.

The existing conditions flood depths highlights that the flows are generally concentrated to the waterways and defined overland flow paths in the region, with sufficient terrain relief to limit the amount of sheet flow. The main concentrated overland flow paths/waterways within the site are as follows:

- The waterway through the middle is generally away from the proposed solar arrays, with minimal isolated areas that may be close to the 1% AEP flood inundation area (See Figure 22). These areas are to the edge of the solar panel regions and depths are shallow and pose little impact on the site.
- The overland flow path across the upper east of the site travels under proposed sections of solar panels and are described as shallow (<0.1m). As the overland flow path progresses downstream, these depths increase to around 0.5m.
- The overflow paths in the south-eastern corner of the site are also considered shallow under the solar arrays in the case of 1% AEP. In the proposed location of the BESS, depths increase up to 0.8m. This will pose minimal impact to overall flood paths due to the close location of the onsite dam immediately downstream of the proposed BESS.
- Little River is located along the northern border of the site, and solar array regions are clear of the 1% AEP extent, except for one location where the overland path joins Little River in the central north of the site. The existing access roads in this location have been designed and sited appropriately to reduce potential flooding impacts.

Figure 22 1% AEP Maximum Flood Depth

Figure 22 1% AEP Maximum Flood Depth



Source: Ecological Australia 2023

Velocities across the site are generally low (<0.5m/s) and below the threshold (<2m/s), therefore further infrastructure to protect waterways and features is not required. Few isolated higher velocities (>1m/s) occur through the overland flow path/waterways through the middle of the site, and should erosion form at these locations, erosion mitigation strategies will be implemented.

Based on the predicted velocities and flood extents, the solar arrays and associated infrastructure at the Barwon Solar Farm are unlikely to affect flood levels or downstream discharge. While there is some potential for flood impacts, the Hydrology Report produced by Ecological notes that this may be considered a "conservative approach," as if the soil type is more sandy, the rainfall will likely infiltrate thus reducing flow rates and flood extents across the site. Key aspects of flood management methods which have been considered in the final design include the location of the BESS, solar arrays and access roads. The proposed solar panels are elevated and will not impact upon surface run off. Other equipment installed on the ground will have a small surface area and have been designed and sited to reduce any significant impact,

particularly the BESS. Appropriate drainage infrastructure will be proposed to prevent damage through erosion or runoff.

8.11. NOISE IMPACTS

Solar facilities are known to be relatively silent, however ancillary systems i.e. inverters and BESS storage units do create noise. NDY have conducted a noise emission assessment to determine if the predicted noise levels of the proposed inverters, and BESS storage units from the three most affected residential receivers (between 70m and 840m from the project boundary) (See Figure 23).

In order to comply with the night period criteria, acoustic treatment will be required to the BESS and to some Inverters. With acoustic barriers, the combined noise level from the inverters and BESS is predicted to be 35-36dBA at the closest residential receivers, compliant with NIRV limits. These will be incorporated into the detailed design and we would expect this requirement and outcomes from the noise emission assessment to be conditioned onto any planning permit granted for this development.

Most the noise impacts will be created during the construction phase of the project. This will be due to the machinery needed to install the proposed equipment and build the appropriate access tracks. However, this will be managed by a construction management plan and will only occur within normal working hours.

Figure 23 Location of Noise Generating Equipment

Source: Urbis 2022

8.12. CUMULATIVE IMPACTS

There are no other utility sized solar farms in the City of Greater Geelong and majority of the surrounding land is made up agricultural land or nature reserve.

The site has been located and designed to minimise or avoid impact to surrounding sensitive uses, areas of cultural sensitivity and native vegetation. Noting, the dual use of the site with light agriculture will also reduce the potential for cumulative impact of built form concentration in the area.

The closest solar farm to the proposed site is in Anakie, a small 5MW solar farm, which is currently under assessment. Additionally, the 3MW Black Rock Solar Farm supplies power for the Black Rock Water Reclamation Plant owned and operated by Barwon Water.

Accordingly, there are no cumulative impacts raised by this proposal.

9. CONCLUSION

This Planning Report has demonstrated that the proposed renewable energy (solar farm) installation is an appropriate use and form of development for the site when assessed against the Greater Geelong Planning Scheme and all relevant State and Commonwealth legislation, policies and guidelines.

It is considered appropriate that a planning permit be granted for a solar installation at 1000 -1320 Little River - Ripley Road, Little River ('the subject site') for the following reasons:

- The proposed development demonstrates consistency with state and local policies, provisions and zoning controls and overlays relevant to the proposal; contained within the Greater Geelong Planning Scheme. The proposed installation and associated ancillary buildings and infrastructure appropriately accounts for the site conditions and constraints and responds accordingly, demonstrating general compliance with the planning provisions contained within the planning scheme;
- The proposed development allows retention of productive agricultural land and not impact negatively upon the long-term viability of this land, as the construction is low impact and can be restored to its previous use upon decommissioning of the installation at the end of its lifecycle;
- The proposal will not negatively impact upon the amenity of surrounding properties and agriculture uses. The passive nature of the solar farm once operational ensures limited noise pollution to neighbouring properties and visual impacts have been mitigated through landscaping screening measures.
- The site supports State and local policies seeking site-responsive renewable energy facilities to assist in meeting Victoria's renewable energy targets.
- The proposal will provide community benefit through its generation of energy to be placed back into the grid for the local supply as well as offshoot benefits through the creation of employment opportunities for maintenance and management of the environment on the site.

Considering the above reasons, Urbis, on behalf of the permit applicant requests that the Minister for Planning provides a planning permit for a solar installation at 1000 -1320 Little River - Ripley Road, Little River as described in this planning report.

10. DISCLAIMER

This report is dated 14 April 2023 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of **(Elgin Energy)** for the purpose of **(Town Planning Application)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A CERTIFICATES OF TITLE

APPENDIX B SURVEY PLAN (VERIS, DECEMBER 2021)

APPENDIX C SITE PLAN (URBIS, APRIL 2023)

APPENDIX D ELEVATION PLAN (URBIS, SEPTEMBER 2022)

APPENDIX E MAPS (URBIS, DECEMBER 2021)

APPENDIX F LANDSCAPE STRATEGY (URBIS, SEPTEMBER 2022)

APPENDIX G STAKEHOLDER ENGAGEMENT OUTCOMES REPORT (URBIS, SEPTEMBER 2022)

APPENDIX H FLORA AND FAUNA ASSESSMENT (BIOSIS, FEBRUARY 2023)

APPENDIX I CULTURAL HERITAGE STANDARD ASSESSMENT (ECOLOGICAL AUSTRALIA, OCTOBER 2022)

APPENDIX J AGRICULTURAL ASESSMENT (AG CHALLENGE CONSULTING, MARCH 2022)

APPENDIX K HYDROLOGY ASSESSMENT (ECOLOGICAL AUSTRALIA, APRIL 2023)

APPENDIX L PRELIMINARY LANDSCAPE AND VISUAL IMPACT ASSESSMENT (URBIS, APRIL 2023)

APPENDIX M ACOUSTIC ASSESSMENT (NORMAN DISNEY & YOUNG, APRIL 2023)

APPENDIX N TRAFFIC IMPACT ASSESSMENT (URBIS, APRIL 2023)

APPENDIX O FIRE RISK ASSESSMENT (ECOLOGICAL AUSTRALIA, APRIL 2023)

APPENDIX P BIODIVERSITY ASSESSMENT REPORT: WELLINGTON SOLAR FARM EVIDENCE (NGH ENVIRONMENTAL, NOVEMBER 2017)

APPENDIX Q CULTURAL HERITAGE DESKTOP ASSESSMENT

APPENDIX R RESIDENTIAL PROPERTY LEASE AGREEMENT (THOMSON GEER LAWYERS, SEPTEMBER 2021)

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