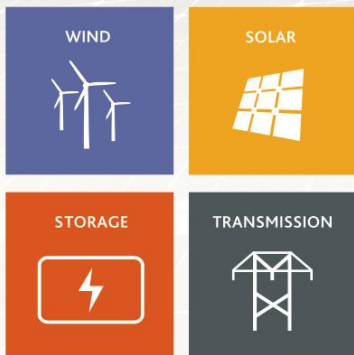




MURRA WARRA SOLAR & STORAGE PROJECT

Planning Permit Application

Volume 1
Main Report



Planning Report

Murra Warra Solar and Storage Project



Planning Report

Murra Warra Solar and Storage Project

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20-Oct-2017

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Quality Information

Document Planning Report
 60516612
 Ref p:\605x\60516612\6. draft docs\6.1 reports\murra warra solar farm report
 19-10-2017.docx
 Date 20-Oct-2017
 Prepared by Kaity Munro, Philip Gibbins
 Reviewed by Kristina Butler

Revision History




Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	21-Feb-2017	Final Issue	Kristina Butler Principal Planner	
A	20-Mar-2017	Addition of Application C	Kristina Butler Principal Planner	
B	20-Oct-2017	Final Report	Kristina Butler Principal - Urban Planning	

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VOLUME 1

1.0 Introduction

1.1 Overview of the Proposal and Development Summary

AECOM Australia Pty Ltd has prepared this planning report on behalf of RES Australia Pty Ltd (the Applicant) to provide supporting information for three planning permit applications, which relate to the proposed development of a photovoltaic solar farm at 2296 Dimboola-Minyip Road, Blackheath, Victoria, approximately 32 kilometres from Dimboola, Victoria. The proposed development will be called the Murra Warra Solar Farm ('the Development') and will be sited within two municipalities, Horsham Rural City Council (HRCC) and Yarriambiack Shire Council (YSC).

The purpose of the Development is to supply electricity generated from solar irradiation into the National Energy Market via the Victorian 220kV network. The facility is expected to have an installed capacity of up to 235MW AC which will be provided by approximately 900,000 solar photovoltaic (PV) modules, and associated infrastructure. The Development will also include a battery storage facility of up to 300MWh capacity in a secure compound. Power generated by the solar farm will be connected to the approved terminal station for the Murra Warra Wind Farm (Planning Permits PA160027, PA160028 and PA160029) and exported to the grid via the Murra Warra Wind Farm transformer. Certain details regarding the final layout and capacity of the site will be determined after a permit is issued (during the detailed design and optimisation stage).

The Development has been divided into three separate planning permit applications. The necessity of three applications is the product of a number of factors including the governance (the site is spread across two municipalities) and future operational and management considerations. Nevertheless, it is understood that HRCC and YSC will consider the Development in its entirety and approve components that are relevant to each municipality.

The planning applications associated with the proposed Development are summarised below.

1.1.1 Application A

RES Australia proposed to install a photovoltaic solar farm at 2296 Dimboola-Minyip Road, Blackheath, VIC, 3401, approximately 27 kilometres from Dimboola, VIC. The proposed site will be called the Murra Warra Solar Farm and will convert insolation into electricity for participation in the National Electricity Market via the 220kV Victorian Transmission Network.

The facility is expected to have an installed capacity of up to 235MW AC which will be provided by approximately 900,000 solar photovoltaic (PV) modules, and associated infrastructure. Final capacity of the site will be determined at the point of detailed design and optimisation.

The application is comprised of the following:

- Approximately 900,000 solar photovoltaic panels with an installed capacity of up to 235MW AC
- Approximately 1800 electrical control cabinets (Combiner Boxes or similar)
- Approximately 90 Power Conversion Units
- DC, AC, earthing and communications and control cabling
- Hard stand areas and site access tracks
- Operations and maintenance buildings
- Construction and laydown areas
- Removal of 13 scattered trees within the Rural City of Horsham
- 30 kilometres (approx.) of access track on private land

- Development may include some stock proof fencing of up to two metres tall and CCTV camera and infrared lighting depending on the Solar Farms insurance requirements (details of the fencing is not confirmed at this stage and will be determined during the detailed design phase to the satisfaction of the responsible authority).
- Business Identification Signage (details of the signage are not confirmed at this stage and will be determined during the detailed design phase to the satisfaction of the responsible authority).

Table 1 Application A summary

Application A Details	
Responsible Authority	Horsham Rural City Council
Applicant	RES Australia PTY LTD
Site Identification	Landowners 2 and 4 as shown on Table 6 of this report and Vol 3 Figure 4– Solar Farm Landowners
Proposed Development	Use and development of a renewable energy facility (solar) and associated buildings and works, removal of native vegetation and business identification signage.
Application Type	Planning Permit
Permit Triggers	<ul style="list-style-type: none"> • Clause 35.07 Farming Zone – a Renewable Energy Facilities is defined as a Section 2, Permit required use (Clause 35.07-1). A planning permit is also required to construct a building or carry out works (Clause 35.07-4) for a Section 2 Use. • Clause 52.05 Advertising Signage – Clause 35.07-7 refers to the advertising signage at Clause 52.05 and specifies that the Farming Zone is in <i>Category 4 – Sensitive Areas</i>. A ‘Business Identification Sign’ is a Section 2 (permit required) use and must not exceed three (3) square metres. • Clause 52.06 Car Parking – The provision of car spaces must be made before a new use commences (Clause 52.06-2). Car parking provision is to the satisfaction of the Responsible Authority. • Clause 52.17 Native Vegetation – Clause 52.17-2 requires a planning permit to remove, destroy or lop native vegetation, including dead native vegetation. • Clause 52.42 Renewable Energy Facility (other than wind energy facility and geothermal energy extraction) – applies to land proposed to be used and developed for a renewable energy facility.

1.1.2 Application B

Application B seeks planning approval for use of land for a quarry, as well as the use and associated buildings and works that will connect the renewable energy facility with the grid. These works are considered to be consistent with the land use definition of a *Renewable Energy Facility* which *includes any building or other structure or thing used in or in connection with the generation of energy by a renewable source*.

As such, the application is for the use and development of a renewable (solar) energy facility comprising:

- Metering Yard
- 33kV overhead double circuit transmission line of approximately two kilometres in length to the point of connection with the grid
- Stone extraction (quarry) to supply subbase material where required
- The Development may include some stock proof fencing of up to two metres tall and CCTV camera and infrared lighting, depending on the Development’s Insurance Requirements (details

of the fencing is not confirmed at this stage and will be determined during the detailed design phase to the satisfaction of the responsible authority)

- Business Identification Signage (details of the signage is not confirmed at this stage and will be determined during the detailed design phase to the satisfaction of the responsible authority)
- Removal of two scattered trees (both within the Shire of Yarriambiack)

Table 2 Application B summary

Application B Details	
Responsible Authority	Yarriambiack Shire
Applicant	RES Australia PTY LTD
Site Identification	Landowner 1 as shown on Table 6 of this report and Vol 3 Figure 4– Solar Farm Landowners
Proposed Development	Use and development of a renewable energy facility and associated buildings and works, use of land for stone extraction, buildings and works for a utility station, removal of native vegetation and business identification signage.
Application Type	Planning Permit
Permit Triggers	<ul style="list-style-type: none"> • Clause 35.07 Farming Zone – a Renewable Energy Facility is defined as a Section 2, Permit Required use within the Zone and a planning permit is required to construct a building or carry out works (Clause 35.07-4) for a Section 2 Use. • Clause 42.01 Environmental Significance Overlay – a permit is required to construct a building or construct or carry out works, construct a fence located within 20m of the toe of a channel or remove, destroy or lop any native vegetation, including dead vegetation. • Clause 52.05 Advertising Signage – Clause 35.07-7 refers to the advertising signage at Clause 52.05 and specifies that the Farming Zone is in Category 4 – Sensitive Areas. A ‘Business Identification Sign’ is a Section 2 (permit required) use provided the total advertisement area to each premises does not exceed three (3) square metres. • Clause 52.06 Car Parking – pursuant to Clause 52.06-2 provision of car spaces must be made before a new use commences. Car parking provision is to the satisfaction of the Responsible Authority. • Clause 52.17 Native Vegetation – pursuant to Clause 52.17-2, a planning permit is required to remove, destroy or lop native vegetation, including dead native vegetation. • Clause 52.09 Stone Extraction and Extractive Industry Interest Areas – applies to the use and development of land for stone extraction • Clause 52.17 Native Vegetation – pursuant to Clause 52.17-2, a planning permit is required to remove, destroy or lop native vegetation, including dead native vegetation. • Clause 52.42 Renewable Energy Facility (other than wind energy facility and geothermal energy extraction) – applies to land proposed to be used and developed for a renewable energy facility.

1.1.3 Application C

Australia's National Electricity Market power system operates within a set frequency range of around 50 Hertz (Hz), providing a consistent supply of energy generation. This underpins the safe, secure and reliable transmission of power through the electricity supply chain from generators to consumers.

Application C proposes an Energy Storage System of up to 300MW capacity. The Energy Storage System is considered to fall within the land use definition of a *Renewable Energy Facility* as it will be able to store energy from both the Murra Warra wind and solar facilities. This stored energy can be used for providing Frequency Control Services to the Grid or Energy Arbitrage, storing excess energy at periods of low demand and releasing that into the grid during periods of high demand. As such, the proposed Energy Storage System is considered to be consistent with the land use definition of a *Renewable Energy Facility* which includes any building or other structure or thing used in or in connection with the generation of energy by a renewable source.

Table 3 Application C summary

Application C Details	
Responsible Authority	Yarriambiack Shire
Applicant	RES Australia PTY LTD
Site Identification	Landowner 3 as shown on Table 6 of this report and Vol 3 Figure 4– Solar Farm Landowners
Proposed Development	Use and development of a renewable energy facility and associated buildings and works and business identification signage.
Application Type	Planning Permit
Permit Triggers	<ul style="list-style-type: none"> • Clause 35.07 Farming Zone – a Stone Extraction is defined as a Section 2, Permit Required use within the Zone and a planning permit is required to construct a building or carry out works (Clause 35.07-4) for a Section 2 Use. • Clause 42.01 Environmental Significance Overlay – a permit is required to construct a building or construct or carry out works, construct a fence located within 20m of the toe of a channel or remove, destroy or lop any native vegetation, including dead vegetation. • Clause 52.05 Advertising Signage – Clause 35.07-7 refers to the advertising signage at Clause 52.05 and specifies that the Farming Zone is in Category 4 – Sensitive Areas. A 'Business Identification Sign' is a Section 2 (permit required) use provided the total advertisement area to each premises does not exceed three (3) square metres. • Clause 52.06 Car Parking – pursuant to Clause 52.06-2 provision of car spaces must be made before a new use commences. Car parking provision is to the satisfaction of the Responsible Authority. • Clause 52.42 Renewable Energy Facility (other than wind energy facility and geothermal energy extraction) – applies to land proposed to be used and developed for a renewable energy facility.

1.1.4 Exemptions - Permit Not Required

The Development includes a number of components that do not require a planning permit. These include the following:

- Transmission Lines
 - Clause 35.07-1 (Table of uses) identifies a Minor utility installation as a Section 1 Use and does not require a planning permit.
 - Clause 62.02-1 (Buildings and works not requiring a permit), sets out exemption from permit requirements in this scheme and includes buildings and works associated with a minor utility installation. Pursuant to Clause 74 (Definitions), this includes *power lines designed to operate at less than 220,000 volts*.
- Roadworks
 - Pursuant to Clause 62.02-2 (Buildings and works not requiring a permit unless specifically required by the planning scheme) a permit is not required unless specifically identified as a permit trigger.
 - Pursuant to the provisions of Clause 35.07 Farming Zone a planning permit for a road is not specifically required. Therefore roadworks are exempt from requiring planning approval.
- Fences
 - Pursuant to Clause 62.02-2 (Buildings and works not requiring a permit unless specifically required by the planning scheme) a permit is not required unless specifically identified as a permit trigger.

1.2 Report Structure

This planning and land use assessment report for the Development is presented as follows:

- **Volume 1 Planning and Land Use Assessment** describes and assesses the Development against relevant legislation and policy, Volume 1 is structured as follows:
 - Section 1 provides an overview of the three proposed applications and identifies the relevant permit triggers and permit exempt works.
 - Section 2 contains a detailed description of the Development Area and its environs.
 - Section 3 provides a detailed description of the buildings and works associated with the two applications.
 - Section 4 details the construction, operation and decommissioning of the Development.
 - Section 5 identifies and responds to applicable Commonwealth and Victorian Legislation, as well as the State and local planning policy frameworks, zoning and overlay controls and particular provisions set out in the Horsham and Yarriambiack Planning Schemes.
 - Section 6 provides a detailed response to the requirements of Clause 52.42 of the Horsham and Yarriambiack Planning Schemes.
 - Section 7 sets out the report conclusion.
- **Volume 2 Technical Appendices** contains range of specialist technical assessments that have been prepared in support of the planning applications. These are cross-referenced throughout the report. The documents and reports contained within Volume 2 are as follows:
 - Certificate of Titles (Section 1)
 - Flora and Fauna Report (Section 2)
 - Desktop Cultural Heritage Assessment (DCHA) (Section 3)
 - Geology and Hydrology Assessment (Section 4)
 - Transport Impact Assessment (Section 5)

- Economic Impact Assessment Report (Section 6)
 - Glint and Glare Assessment (Section 7)
 - Environmental Noise Assessment (Section 8)
 - Landscape and Visual Impact Assessment (Section 9)
 - Endorsed Work Plan (Section 10)
 - Environmental Management Plan (Section 11)
 - GWM Water Correspondence (Section 12)
- **Volume 3 Development Plans** contains a full set of proposed site context and development plans.

1.3 Background

1.3.1 Renewable Energy Targets and the Development's Objectives

Overwhelming scientific evidence indicates that carbon emissions are contributing to climate change and having detrimental effects on the environment and that if such emissions continue to increase, there will be serious consequences for biological and social systems worldwide. It is widely recognised that renewable energy sources are needed to displace greenhouse gas emissions arising from burning fossil fuels for electricity generation. Policies have been put in place at the international, national and state level to proactively support the establishment and use of renewable energy.

Electrical generation accounts for over 30 percent of Australia's greenhouse gas emissions. Domestically, the Commonwealth Government is currently committed to reducing emissions of greenhouse gases to five percent below 2000 levels by 2020. On 23 June 2015, the Federal Parliament passed the *Renewable Energy (Electricity) Amendment Bill 2015* which mandates that 33,000GWh (23.5 percent) of the country's electricity will be generated from renewable sources by 2020.

In addition, the Victorian Government is committed to legislating a long-term target for Victoria of net zero greenhouse gas emissions by 2050. The Victorian Government has also committed to Victorian renewable energy generation targets of 25 per cent by 2020 and 40 per cent by 2025 and implementing supportive policies to encourage the renewable energy sector to invest in renewable energy projects in Victoria. The Premier of Victoria announced on the 15 June 2016 that a target would be set of obtaining 40% of the State's electricity needs from renewable energy by 2025.

The primary objective of the Development is to generate electricity from a renewable energy source (i.e. sun) for export to the transmission network. The Development would contribute to the national objective to produce 33,000GWh of electricity from renewable sources by 2020. At its maximum projected capacity, the Development could supply up to 83,000 Victorian homes with electricity and save 0.4million tonnes of greenhouse gas emissions a year and make a significant contribution towards both Australia and Victoria's renewable energy targets.

The Development represents an exciting enterprise for the Wimmera Southern Mallee region and significant opportunities to capitalise on an emerging market for renewable energy. The combined Murra Warra Wind and Solar Farms would represent a significant sustainable development that embodies economically, environmentally and socially sustainable foundations. The Development will provide economic stimulus, reduce carbon footprint and take the Wimmera region closer to reaching the new technological innovation markets for clean energy.

1.3.2 Proponent Details

RES Australia (RES) is a division of the UK based RES Group, which is a sister company of the 150 year old Sir Robert McAlpine Group, a leading UK construction and civil engineering company responsible for the construction of many significant infrastructure and iconic buildings including the main stadium for the 2012 London Olympics. RES has been developing renewable energy in Australia since 2004. RES has a wealth of global experience in renewable energy development, construction and operations. Most recently in Australia developing and constructing the 75 turbine Ararat Wind Farm VIC and securing the permit to construct the 116 turbine project at Murra Warra. Globally RES

have developed over 12 GW of renewable energy projects (wind and solar) and are an industry leader in the development and construction of utility scale battery storage.

1.3.3 Stakeholder Engagement and Community Consultation

There has been limited community consultation in relation to the current solar farm planning proposals due to the extensive stakeholder consultation in relation to the recently approved Murra Warra Wind Farm, on the land surrounding the solar farm to the north and west. This consultation commenced in 2009 and continued throughout the preparation of the planning permit application and associated technical investigations. The preparation of specialist reports supporting wind farm and subsequently the solar farm applications has included engagement with various agencies, bodies and local groups who have been kept informed and given the opportunity to comment. RES will continue to engage with stakeholders and the community as the Murra Warra wind farm development and its construction progresses. Typically prior to the commencement of construction a community liaison forum would be set up.

Stakeholder consultation for the proposed solar farm has therefore focused on obtaining feedback from key stakeholders, which are contained in Volume 2, Section 12 and summarised in Table 4

Table 4 Referral Authority Feedback

Referral Authority	Response
GWM Water	No objection to any planning and development of infrastructure for the Proposed Murra Warra Solar project.
Aboriginal Victoria	Acknowledges that the solar project sits within the existing 'activity area' subject to CHMP 14576 and is included in the project description for the notice of intent to prepare CHMP 14576.
Wimmera CMA	Undertaken a review of the draft geology and hydrology report and do not have any comments at this stage of the process.
DELWP	Confirms that no additional work is required for this application in relation to biodiversity assets.
RAP	Undertaken a review of the Desktop Heritage Assessment, generally agrees with the results.
VicRoads	Undertaken a review of the Traffic Impact Assessment and confirmed that the application will be referred to VicRoads through the planning process, providing VicRoads with an opportunity to formally respond and apply appropriate conditions as required.

When the solar farm becomes operational, an annual community fund of \$45,000 per year will be provided to support community developments and good causes. RES Australia is proud to have provided support and assistance to a number of local clubs, developments and facilities and these include those listed below:

- Horsham Town Hall and Arts Centre Principal Patron;
- North Wimmera CFA;
- Wallup Agriculture Group
- Sailors Home Community Hall;
- Wallup Community Hall;
- Kalkee Football and Netball Club and Kalkee Tennis Club;
- Minyip Progress Association'
- Wimmera Development Agency, Business Award Sponsor; and
- Major sponsor of Yarriambiack Shire Easter Festival YFEST
- Warracknabeal 150th Anniversary Celebrations

2.0 Development Area Existing Conditions

2.1 Development Area Location

The Development Area is located within the Wimmera Southern-Mallee Region in Western Victoria, approximately half way between Horsham (south) and Warracknabeal (north), west of the Henty Highway. Horsham is the regional centre of the Wimmera Southern Mallee Region and provides a wide range of services to the whole region and adjoining areas. Agriculture is the dominant land use, economic driver and employment sector in the region, predominantly comprising broad-acre cropping of cereals, pulses and oilseeds in the central and northern parts of the region and livestock grazing in the southern parts. Key environmental assets identified by the Wimmera Regional Catchment Strategy (2012) include rivers and streams, wetlands, native vegetation, threatened plants and animals and soils.

The site is located within the municipalities of Horsham and Yarriambiack, as shown in Figure 1 below (refer to **Volume 3 Figure 3A** for more information).

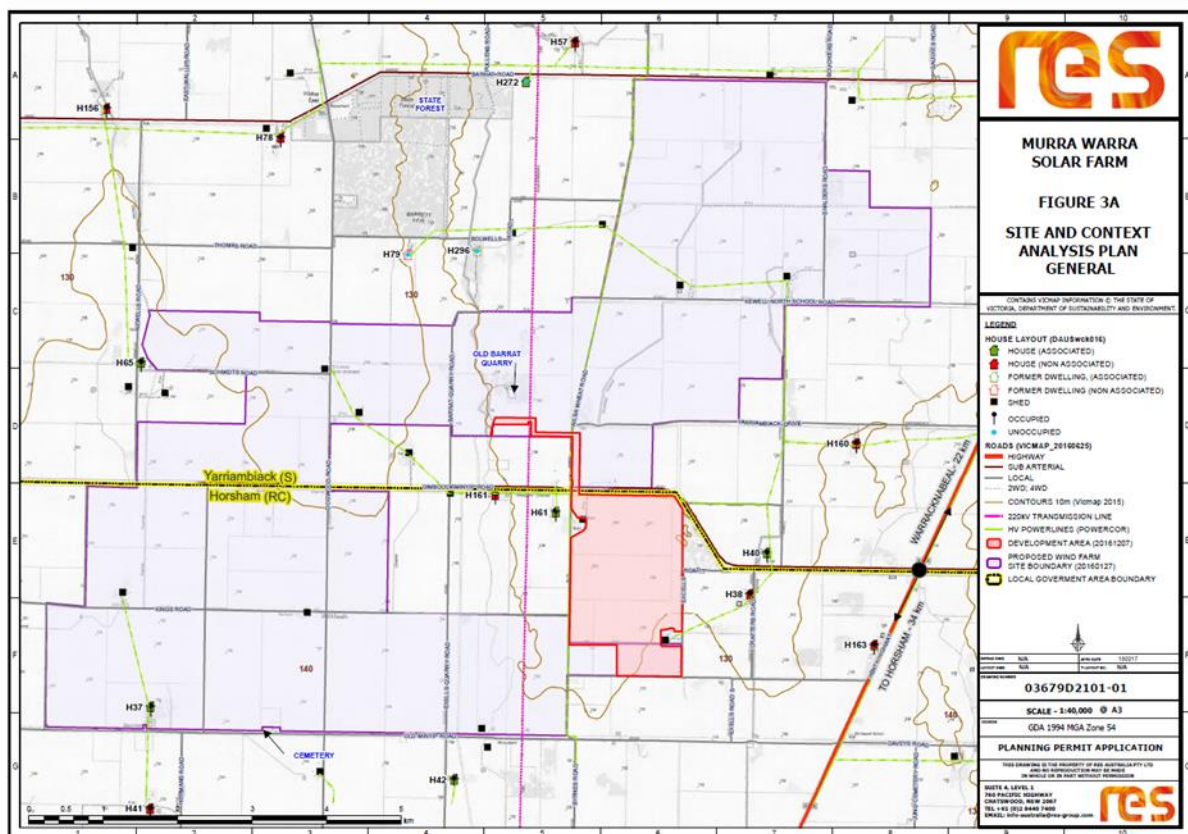


Figure 1 Location Plan

The border between the two municipalities runs along the northern edge of Dimboola-Minyip Road. Other proximate towns to the Development Area are Dimboola (20 kilometres west) and Minyip (19 kilometres to the east). The Development Area is approximately 370 hectares and consists of flat, open land used predominantly for broad acre cropping with triangular patches of trees in the north east corner.

The Development Area has been selected by RES because it has excellent baseline characteristics for a high performing solar energy facility with minimal adverse environmental impacts (refer also to section 1.1). In addition, the proposed solar farm will be co-located with the permitted Murra Warra Wind Farm, and the proposed battery storage facilities will ensure that the Murra Warra Wind and Solar Farms can become a constant and reliable source of renewable energy in the region.

2.2 Development Area Description

2.2.1 Land Use

The Development Area is primarily located on freehold agricultural land that covers an area of approximately 370 hectares. The land is located wholly within the Farming Zone. Historically it has been heavily cleared for broad acre cropping and grazing. The Development Area and immediate surrounds was presented in **Error! Reference source not found.**

There are numerous farm buildings and non-residential structures in the vicinity of the Development Area. Non-residential uses include:

- The Sailors Home Community Hall at the intersection of Blue Ribbon and Old Minyip Roads (HRCC);
- The Sailors Home Cemetery on Old Minyip Road (HRCC);
- The Barrett Flora and Fauna Reserve and State Forest on Barratt and Dogwood Roads (YSC);
- The Blue Ribbon Raceway car racing track which is approximately 12.5km to the south-east of the southern boundary of the site (HRCC); and
- The Warracknabeal Aerodrome which is approximately 14.5km to the north-east of the northern boundary of the site (YSC).

In terms of the residential use within the Development Area, there are a total of four inhabited dwellings within two kilometres of the development.

2.2.2 Infrastructure

2.2.2.1 Electricity Transmission Line

The nearest grid transmission line is the main 220kV line running from the Horsham Terminal Station to the Redcliffs Terminal Station. The line bisects the Development area located within the YSC from north to south and has sufficient capacity for the Development. Power generated by the Development will be connected to the proposed Terminal Station for the Murra Warra Wind Farm (subject to a separate planning process) and connected to the line via the Murra Warra Wind Farm transformer.

The proposed terminal station is within the site boundary which means there would be no requirement for a connecting transmission line to be constructed. This is a key feature of the site's suitability for the proposal. There is a smaller local 22kV line which runs from Horsham to Warracknabeal along the Alisa Wheat Road through the site, but this has insufficient capacity for the proposed Development. In addition, there are two 11kV overhead single wire earth return (SWER) lines serving isolated properties and dwellings across the site. The existing 220kV powerline and other above ground infrastructure is clearly indicated on **Volume 3 Figure 3A**

2.2.2.2 Wimmera Mallee Pipeline

GWM Water has easements and ownership of irrigation channels, which were once part of the Wimmera Mallee Irrigation system, which was replaced in 2009 by 11,000km of pipework forming the Wimmera Mallee Pipeline. This pipeline provides reticulated water to homesteads and farms across the Wimmera Mallee Region. The pipeline is generally located underground in an easement within paddock fence lines.

2.2.3 Environment

2.2.3.1 Topography, Geology and Hydrology

The site is generally flat with a gentle fall from north to south with no notable topographic features. There are no designated waterways or minor streams within the Development Area. The site is 7km west of the Yarriambiack Creek. It is not in an area prone to flooding and was not inundated during the Wimmera flood event of 2010-2011 when the Yarriambiack Creek flowed for the first time in 15 years.

The now obsolete and decommissioned open channel rural water supply system (the Wimmera Mallee Irrigation system) is in the process of being disposed of (to adjoining landowners) and filled in on an ad hoc basis as these channels are not required for local storm water control. The channel system was replaced with a piped system in the Wimmera region between 2006 and 2010 and this water is

expected to be drawn upon for construction purposes. Alternatively, ground water bores may be accessed for road building and dust suppression purposes only. As the salinity of the ground water is high there is no noteworthy beneficial use of it for agriculture or residential/commercial use.

2.2.3.2 Landscape Features

The Development is situated in a landscape that has a low sensitivity to change. It is a broad-acre rural landscape that has been cleared to create huge areas for farming. The flat topography and extensive clearing has created a large landscape that is characterised as ‘big plains’ in the Landscape and Visual Impact Assessment (LVIA) (**Volume 2 Section 9**). The closest sensitive landscape features identified in the LVIA and local policy are located approximately 50 kilometres away from the subject site and areas of greater sensitivity, such as urban areas, are all situated at some distance from the Development.

2.2.3.3 Flora and Fauna

Biosis Pty Ltd was commissioned by RES Australia to undertake a flora and fauna assessment of the study area for the Development. Key ecological values identified within the study area are as follows:

- Patches of Plains Savannah and Plains Woodland which provide potential habitat for Australian Piert, Wimmera Rice-flower, Downy Swainson-pea and Hooded Robin (all significant species).
- Scattered paddock trees, including one Buloke (a significant species). An assessment of the Development in relation to key biodiversity legislation and policy is provided and summarised in section 6.1

2.2.4 Heritage

A desktop cultural heritage assessment (DCHA) has been prepared by *Archaeology At Tardis Pty Ltd* for the Development. The DCHA was prepared to identify any potential indigenous and historic cultural heritage values within and surrounding the activity area so that they are managed appropriately and was informed by a vehicular site inspection. Key findings of the report are summarised in section 6.2

2.3 Access

The main road transport corridor in the region is the Western Highway, which connects Horsham, Stawell and Nhill with Melbourne (via Ballarat) and Adelaide. The Melbourne-Adelaide railway generally follows the Western Highway, with a deviation to Murtoa between Stawell and Horsham. There are numerous other important road and rail corridors including the Henty Highway, which runs north-south through the region and provides access to the east of the site whilst Blue Ribbon Road is a north-south route to the west of the site. Both of these roads are contained within the Road Zone Category 1 (RDZ1).

A summary of local roads is provided in Table 5. The Henty Highway and the two-lane sealed section of Dimboola-Minyip Road (east of Henty Highway) provide immediate access within five kilometres of the site. West of Henty Highway, Dimboola – Minyip Road is a single lane width sealed carriageway with unsealed shoulders. Ailsa Wheat Road also runs along the west border of the site and connects Dimboola-Minyip Road to Old Minyip Road. Alternative access to the south-west section of the site from Henty Highway may be provided via Old-Minyip Road and Ailsa Wheat Road if necessary.

Table 5 Local road summary

Road	Section	Sealed/Unsealed
Dimboola-Minyip Road	Henty Highway –Ailsa Wheat Road	Sealed
Old Minyip Road	Henty Highway –Ailsa Wheat Road	Unsealed
Ailsa Wheat Road	Dimboola-Minyip Road – Old Minyip Road	Unsealed
Excels Road	Dimboola-Minyip Road – Old Minyip Road	Unsealed

According to the Transport Impact Assessment (TIA) prepared by AECOM, the current volume of traffic observed on the section of Henty Highway between Horsham and Warracknabeal is estimated to be 3,600 vehicles per day, with 11% of those (396) classed as heavy vehicles (Horsham Rural City Council Integrated Transport Study 2016). A small volume of cars use Dimboola-Minyip Road to travel between the towns of Minyip and Dimboola, however the volume associated with this movement are limited and overall traffic volumes along Dimboola-Minyip Road and other local roads is estimated to be limited given that access is their primary function.

2.4 Land Ownership and Certificate of Title

RES Australia has agreements with four (4) landholding families to lease the relevant parts of the land upon which Development infrastructure will be located. Where a landowner has leased a portion of their property to form part of the Development Area (for solar panels or other solar farm infrastructure and stone extraction) they are referenced as 'associated' landowners. A visual representation of the associated land owners and overall land ownership across the Development Area is provided in **Volume 3 Figure 4**.

For the Development, RES has secured an agreement to purchase freehold land encompassing the utility area, switch yards and terminal station as well as an area of land suitable for vegetation offsetting. A breakdown of land ownership and title is presented in Table 6 with a list of the certificates of title affected by the proposal and a summary of the encumbrances provided in **Volume 2 Section 1**.

There are no relevant encumbrances or caveats on the Certificates of Title. The Development will also impact on various Crown Roads which exist within the site boundary and are shown in **Volume 3 Figure 4**.

Table 6 Land ownership details (Development Area)

Ownership Reference (See Fig 4)	Vol/Folio details	Standard Parcel Identifier	Ownership (Public/Private)
Application A – Horsham Rural City Council			
2	Volume 08366 Folio 341	177\PP2869	Private
2	Volume 08733 Folio 790	1\TP385792	Private
2	Volume 08142 Folio 987	1\TP244449	Private
2	Volume 06365 Folio 830	179\PP2869	Private
4	Volume 07919 Folio 002	1\TP345238	Private
4	Volume 07919 Folio 002	2\TP345238	Private
4	Volume 04981Folio 181	1\TP381633	Private
4	Volume 04981Folio 181	2\TP381633	Private
Application B – Yarriambiack Shire Council			
1	Volume 10391 Folio 182	144\PP2870	Private - Easement to State Electricity Commission of Victoria created by Instrument No. E220505
3	Volume 09519 Folio 888	190\PP2869	Private
Application C – Yarriambiack Shire Council			
3	Volume 10391 Folio 182	144\PP2870	Private - Easement to State Electricity Commission of Victoria created by Instrument No. E220505

2.5 Site Selection and Design Development

The proposed solar energy facility will provide energy for up to 83,000 Victorian homes and prevent the release of 0.4M tonnes of greenhouse gas annually, contributing significantly to the Victorian Government's objective to provide 5400MW of extra renewable energy capacity by 2025. In addition, the proposed battery storage area will enable energy to be stored and dispatched direct to the grid when required.

The Development site was chosen due to the levels of solar radiation (estimated to be approximately 17mj/m² annually) and the following advantages:

- the ability to share connection assets with the adjacent, recently approved Murra Warra Wind Farm (Planning Permits PA160027, PA160028 and PA160029), thereby reducing the overall cost of the Development;
- No reduction in public safety and amenity risks as the location contains small population;
- The topography, which is relatively flat and rectangular in shape, ensuring a straight forward layout, construction and ongoing maintenance process;
- The proximity to high voltage powerlines and major highways
- The low levels of native vegetation ensuring minimal site clearance and loss of native vegetation.
- The locally available material resources from the adjacent quarry, reducing the need to transport materials to the site via the public road system;
- The negligible impact on heritage.

Generally, solar developments are compatible with farming regions, and are able to co-exist with agricultural operations on adjoining land whilst enabling grazing activities to occur on site, as a means of maintaining grasses and access tracks around the solar panels. This offers the additional benefit of reducing fire risk. The Applicant has the ability to graze sheep on the site throughout the life of the Development and will explore this opportunity with the land owners and existing agricultural operators.

2.6 Fire Risk

Electrical equipment (e.g. generators and transformers) and flammable materials (e.g. lubricants, oils and fuels) are key components of solar farm infrastructure and there may be a risk of fire associated with their operation. Although the region is considered a high risk bushfire prone area, there are no bushfire management overlays on or within vicinity of the site. As such, the risk of bushfire is considered to be relatively low with the correct maintenance regime in place.

Appropriate fire prevention measures will be required as part of the construction environmental management plan (CEMP), as the construction phase is the period when activities associated with the Development may be more likely to increase the risk of bushfire ignition. It is expected that a Bushfire Management Plan would be prepared as a condition of planning permit. RES have and will continue to liaise with local and regional fire authorities to ensure an appropriate fire management plan is in place to respond to a potential fire prior to construction.

3.0 Proposed Development

3.1 Application A

The following section provides a detailed overview of the project components associated with Application A.

3.1.1 PV and Racking

A typical fixed PV table consists of modules; commonly called “solar panels”, typically with dimensions of 1m x 2m and 50mm thick, arranged on mounting racks (refer to examples in Figure 2 and Figure 3). The width of the rows may vary depending on site conditions and access requirements but would typically be up to 6metres. Groups of PV modules are connected in series to form a string. The modules generate electricity in direct current (DC) which then needs to be converted to Alternating Current (AC) and transformed to a suitable voltage (typically 33kV) for onward transmission to the grid network.

The proposed PV modules will be mounted on steel or aluminium racking systems with a height above ground level of approximately 4 metres. This includes up to 3m of panel modules sited at 20-30 degrees from the horizontal, plus 0.5metres of ground clearance to enable maintenance access below the PV Modules. Racking will be mounted on foundations which will typically consist of directly embedded piles of up to 2metres depth, depending on the ground conditions.

An alternative configuration would be to use a single axis tracker arrays aligned north to south. These units consist of panels attached to racking which rotate around the horizontal axis, following the suns trajectory.

Small electrical control cabinets (typically called Combiner Boxes) will be installed adjacent to some of the panel racks. The electrical cabinets are there for control and protection of the cable system connecting the strings of PV Modules with Inverters. They will generally be located near or under the racks so that they are shaded and visually unobtrusive. There will be approximately 1800 of these electrical cabinets (there are approximately 20 cabinets per inverter).



Figure 2 Example of a typical fixed panel system



Figure 3 Example of typical single axis tracker

3.1.2 Power Conversion Units (PCUs)

PCUs housing transformers and inverters will be located within the PV Module Array. There will be approximately 90 PCUs. The inverters will convert the Direct Current (DC) to Alternating Current (AC) and the transformers will uprate the voltage from Low Voltage to a Medium or High Voltage as required by the electricity grid connection. Each unit will be up to 12metres long by 3 metres wide and 3 metres high.



Figure 4 Example of typical Power Conversion Units

3.1.3 Connection to the Grid

Cables from the solar arrays will be collected in secure compounds adjacent to the control buildings, which are proposed to be located in the north-west corner of the site as shown in plans in **Volume 3, Fig 11**. Power from the plant will be carried via a 33kV overhead double circuit transmission line of approximately two kilometres in length to the point of connection with the grid at the site of the proposed terminal station for Murra Warra Wind Farm. The transmission line will be carried on either concrete or steel poles of up to 30m height. The majority of the transmission line will fall within YSC and does not form part of Application A – see also section 3.2.1.

3.1.4 Cabling

DC and AC cabling will consist of copper or aluminium cables buried in trenching of dimensions up to a maximum of 1200mm deep and up to 1500mm wide where multi cable trenches are utilised, although typically trenches will be smaller circa 600mm wide. The cables will be bedded in a sand backfill typically 100mm above and below each cable, with excavated material used to backfill the trench to ground level and cable location warning tape placed towards the top of the backfill.

Cable runs will be through the PV Module Array, following the array layout and access tracks. Cabling will run from the arrays to the control building which is located at the north-west corner of the site via Electrical Control Cabinets and the PCU's. These cable runs will also contain communications cabling for the Supervisory Control and Data Acquisition (SCADA) system which will consist of copper or fibre optic cables.

3.1.5 Hardstand Areas and Site Access Tracks

Hardstand areas will be required at each embedded substation location to allow cranes to set up for offloading and placing components. These areas will consist of compacted stone of variable thickness up to typically 300-500mm and approximately 12m by 12m square in plan. The construction will ensure these areas are permeable to maintain surface water run off rates.

The hardstand will be left in place during the life of the Development to allow for craning of replacement components if required but, in order to optimise the use of space on the site, these hardstand areas may be covered by the PV Module Array which can then be removed in the event of maintenance requiring crane access to lift components from the PCU's.

There will be a network of site access tracks to facilitate construction of the site and then ongoing maintenance. Tracks will be constructed of crushed gravel which will be sourced locally from the nearby quarry, and will be a minimum between 3- 7metres wide. The access track layout is shown in **Volume 3 Figure 5**.

3.1.6 Security Fencing

The PV modules may be surrounded by wire stock fencing with wooden or steel poles up to 2m high. The extent of security fencing is dependent on insurance requirements for the Development. Typical security fence vehicle gates will be incorporated into the fencing system to allow vehicular and pedestrian access to the PV modules, inverters, transformers and substation locations for operation and maintenance activities. Appropriate safety signage will be displayed on the fencing and gates. Figure 5 below provides an example of proposed fencing and placement. Typical stock proof fencing is also shown in **Volume 3 Figure 18**.



Figure 5 Example of proposed wire stock fencing and placement

3.1.7 CCTV and Infra-red lighting

If considered necessary, a CCTV security system may be installed with cameras and infrared lighting supported on posts placed at regular intervals on the perimeter and within the site. This system will consist of support posts of up to 3.5m high located around the perimeter of the site. With regard to installation, the lowest possible camera height will be provided at each location to obtain the required visibility. The location of security cameras will form part of final design. Figure 6 provides an example of typical security lighting and CCTV support details

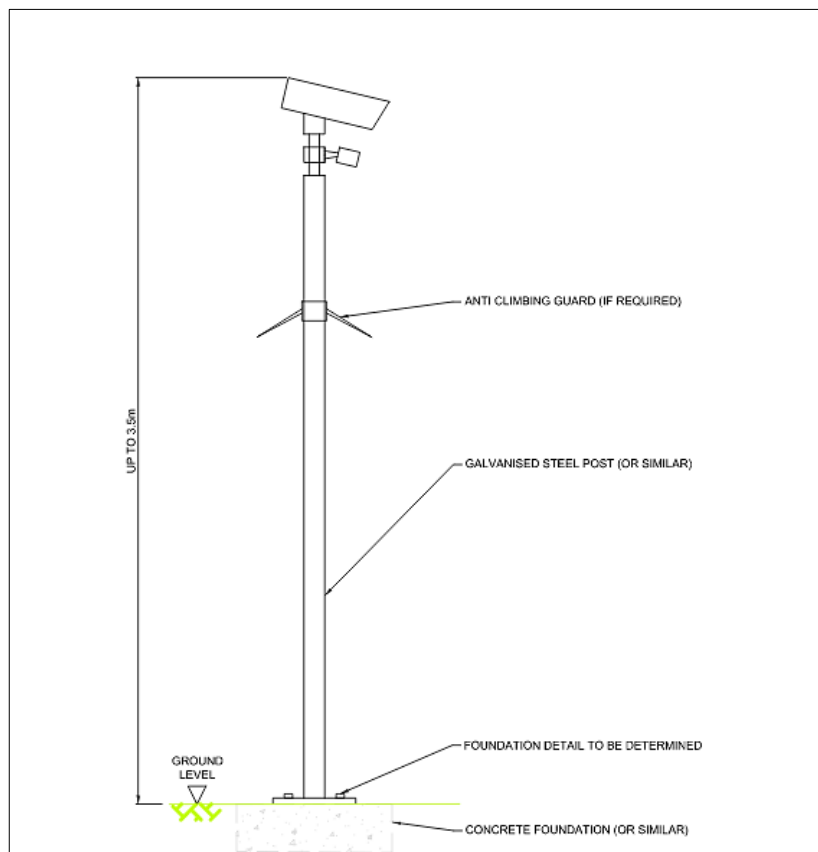


Figure 6 Example of typical security lighting and CCTV system

3.1.8 Operations and Maintenance Buildings

There will be a small control building contain SCADA equipment for monitoring the site and welfare facilities for maintenance staff. There will also be a building for storage of spare parts and maintenance equipment. See **Volume 3 Figure 11** for further information.

3.2 Application B

The following section provides a detailed overview of the project components associated with Application B.

3.2.1 Grid Connection

Cables from the PV Solar Arrays will collect in a secure compound adjacent to the control building on the Solar Farm site (Refer to **Volume 3, Figure 5**). It should be noted that the secure compound and control buildings fall within HRCC and do not form part of Application B. Power from the plant will be carried via a 33kV overhead double circuit transmission line of approximately two kilometres in length to the point of connection with the grid at the site of the proposed terminal station for Murra Warra Wind Farm.

The transmission line will be carried on either concrete or steel poles of up to 30m height. At the point of connection there will be small yard which will contain switches, isolators, reactive power plant and metering which will be located adjacent to the point of connection at the site of the proposed terminal station for Murra Warra Wind Farm (Permit No PA1600129) (see **Volume 3 Figure 16**). Figure 7 below shows typical 33KV overhead line poles. For further information, please refer to **Volume 3 Figure 14** of the planning package.

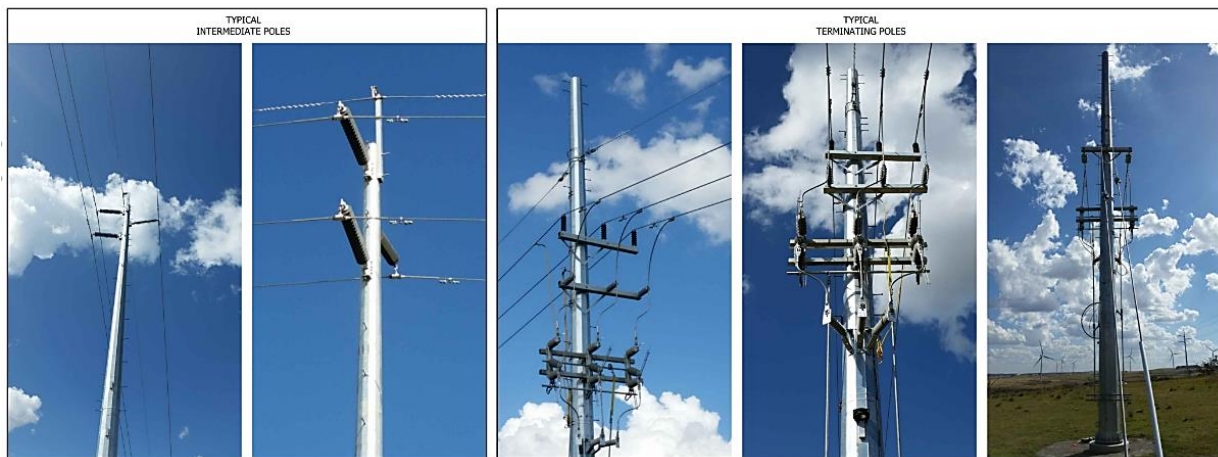


Figure 7 Typical 33KV Overhead Line Poles (intermediate and terminal poles)

3.2.2 Quarry

A quarry is being developed on-site for the adjacent Murra Warra Wind Farm to provide requisite construction material from an on-site source, thereby reducing the need for heavy vehicle traffic on public roads to deliver the materials for the Wind Farm. The quarry is to be located adjacent and to the north of the battery storage zone and collector station (**Volume 3 Figure 7**). The quarry has current planning and works approval (Planning Permits PA160027, PA160028 and PA160029) as an ancillary use to the Murra Warra Wind Farm.

It is proposed to expand the use of the quarry to provide requisite construction material for the proposed development. The quarry dimensions would not be altered as part of the proposed use for construction of the solar farm.

The Endorsed Work Plan is provided in **Volume 2 Section 10** (for use of the quarry for the Murra Warra Wind Farm). This Work Plan will be amended to extend the use of the quarry to include the solar farm. The Department of Economic Development, Jobs, Transport and Resources (DELWP) have confirmed that the following process for use of the quarry:

- Confirm via planning permit application that extractive materials will be utilised for construction of both the Murra Warra Wind Farm and Solar Farm
- Following issue of a planning permit for the solar farm, return the Endorsed Work Plan and planning permit to DELWP seeking amendment
- DELWP will then make a determination on any required work plan specific conditions that would be placed on the revised work plan.

Following approval of the proposed solar farm and associated quarry, the above process and amendment of the existing Work Plan would be undertaken in accordance with the above process and a suitably worded permit condition.

3.3 Application C

The following section provides a detailed overview of the project components associated with Application C.

3.3.1 Energy Storage Facility

Unlike markets for storable commodities, the electricity market is reliant upon the real-time balance of supply and demand. Electric Energy Storage (EES) is the capability of storing electricity or energy to produce electricity and releasing it for use during other periods when the use or cost is more beneficial. The Development will include an Energy Storage Facility of approximately 300MW rated capacity which will be provided by banks of Lithium-Ion Batteries. These will be housed in a purpose built building.

The purpose of the Energy Storage Facility is to provide services including energy smoothing and frequency control integration and improved reliability as well as energy arbitrage. Use of storage for “energy arbitrage” applies when the price difference is such that energy can be stored during periods of low demand and then discharged during periods of high demand. The storage facility will be used to provide energy storage for both the Solar Development and the approved Murra Warra Wind Farm.

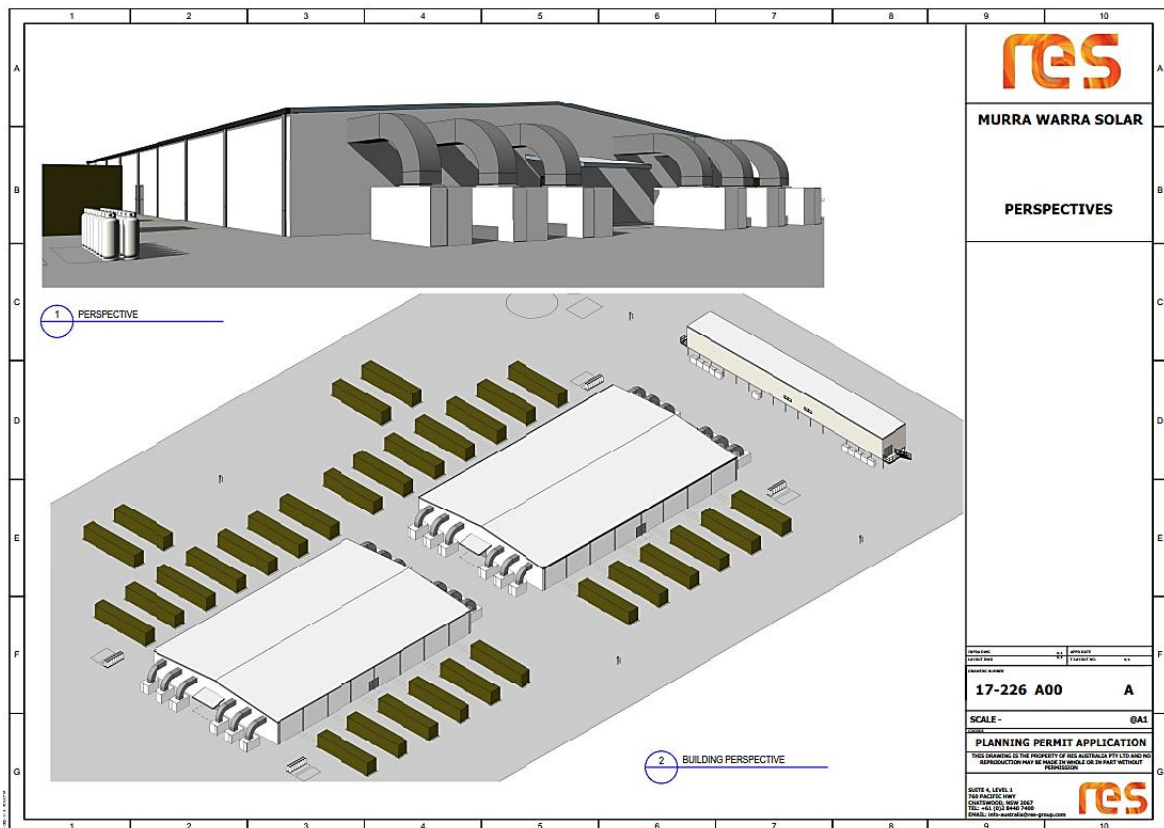


Figure 8 Perspective view of proposed Energy Storage System

4.0 Construction and Operation

It is estimated that there would be an 18 month construction period for the Development. The following sections provide further detail regarding the construction process and operation of the facility following completion.

4.1 Temporary Construction Compound

Up to three temporary site compounds would also be required during the construction period. The compound would be used for storage of materials, and would contain office and staff welfare facilities. The compound would be fenced using temporary fencing for safety and security. It would also include an area for worker and visitor parking. This would incorporate a laydown area for equipment and material brought to site. The compound would be surfaced appropriately with compacted stone, which may be removed following the completing of the construction phase.

4.2 Construction activities

The Transport Impact Assessment (TIA) prepared by AECOM estimates an 18 month construction period, which would include the following tasks and vehicular requirements:

- Site set up and demobilisation (semi-trailer and low loader);
- Road and hardstand material construction equipment delivery (truck and dog and low loader);
- General equipment delivery (low loader and semi-trailer);
- AC Cable installation (semi-trailer and low loader);
- Overhead line installation (semi-trailer, low loader and RAV);
- Sub-station construction (concrete agitator, low loader, semi-trailer, RAV and truck); and
- Other employee movements, waste, consumables etc. (light vehicle, van and truck).

RES Australia estimates that the number of movements during this period is 53,053, which suggests an average of 115 vehicle trips per day, assuming six operating days per week and seven public holidays. Pursuant to AECOM's analysis, 77 percent of vehicular movements will be undertaken by light vehicles.

The construction process for the Development involves the following activities.

- Site access and establishment;
- Civil works, including clearing of land, limited grading, compaction, stormwater drainage and sediment controls and dust suppression;
- Installation of the mounting structures, including rows of driven piles will be pneumatically driven into the ground using specialist equipment; steel mounting structures would then be attached to the piles. If required ground screws may replace the need for driven piles;
- Installation of the solar panels onto the mounting structures;
- Installation and connection of the solar panels to the combiner boxes;
- Installation of the power conversion stations;
- Connection of the combiner boxes to the power conversion stations and underground cabling and connection of the power conversion stations to form the onsite power reticulation system to evacuate power from the site;
- Grid connection works taking power from the onsite reticulation system to the local electricity grid; and
- Commissioning and testing.

Construction vehicle movements are described in the TIA. A more detailed traffic management plan is yet to be determined and it is anticipated that this level of information would be required as a condition of permit.

4.3 Construction timeline

The physical construction works for the Development is anticipated to begin during 2018, after further site investigation works, development delivery planning, detailed design and development of construction management plans. The Developments timing are subject to the outcome of the planning process, granting of the Development's approval, grid connections and discussion with stakeholders. Construction of the Development is anticipated to take approximately 18 months.

Construction activities would be undertaken during standard hours for construction works. Any construction or commissioning activities outside of these standard working hours would require approval from relevant authorities. Any affected local residences would be informed of the timing and duration of the proposed activities, prior to the commencement of any works.

4.4 Operation

The solar farm is anticipated to operate for approximately 30 years. A minimal number of personnel would be required for the operation and maintenance of the Development. It is expected that the Development would require up to three full time equivalent personnel to carry out day to day operations and maintenance activities. Operational activities are expected to include remote monitoring of equipment on a daily basis, full servicing of inverters and substation equipment on a quarterly basis and cleaning of the solar panels at regular intervals depending on how the system performs benchmarked to weather conditions. It is expected that the solar panels would need cleaning on average four times during any calendar year. There will be no storage of hazardous or dangerous goods or materials on site during the operation of the Development.

4.5 Decommissioning

The operational life is currently designed for up to 30 years. The Development will be decommissioned at the end of its planning consent unless any alterations to the permit are obtained. Site clearance and reinstatement would be carried out in line with best practices at the time. It is expected that this will take approximately 6-9 months. All materials deployed are capable of being recycled and it is expected that an aspiration to recycle or reuse the majority of materials will be achievable. Following decommissioning of the site, rehabilitation of the site will ensure that it continues to be viable for agricultural purposes.

5.0 Legislation and Policy

The following sections identify and respond to applicable Commonwealth and Victorian Legislation, as well as the State and local planning policy frameworks, zoning and overlay controls and particular provisions set out in the Horsham and Yarriambiack Planning Schemes.

5.1 Commonwealth Legislation

5.1.1 Environment Protection and Biodiversity Conservation Act 1999

This Act provides for a Commonwealth assessment and approvals system for:

- Actions that have a significant impact on Matters of National Environmental Significance;
- Actions that (indirectly or directly) have a significant environmental impact on Commonwealth land;
- Actions carried out by the Commonwealth Government.

A proposal requires the approval of the Environment Minister if an action is likely to have a significant impact on a matter of national environmental significance (MNES) or listed as a matter of national significance which includes World Heritage Properties, Wetlands of International Importance, Commonwealth listed threatened species and ecological communities, commonwealth listed migratory species, nuclear action, commonwealth marine areas and commonwealth land.

Response:

The Development is unlikely to result in a significant impact to any MNES and is not considered to require approval of the Environment Minister. It is noted that there is a potential habitat for EPBC Act listed flor species (Wimmera Rice-flower and Australian Piert) within study area. The potential habitat for threatened species will not be affected by the proposed Development. A full Flora and Fauna Assessment is provided at **Volume 2 Section 2**.

5.1.2 Renewable Energy (Electricity) Act 2000

The objectives of the Renewable Energy (Electricity) Act 2000 (RE Act) are:

- Encourage the additional generation of electricity from renewable sources
- Reduce emissions of greenhouse gases in the electricity sector
- Ensure that renewable energy sources are ecologically sustainable

Objectives are achieved through the issuing of certificates for the generation of electricity using eligible renewable energy sources and requiring certain purchasers (called liable entities) to surrender a specified number of certificates for the electricity that they acquire during a year. The Australian Government's Renewable Energy Target (RET) scheme sets the framework for both the supply and demand of renewable energy certificates (RECs) via a REC market. Section 17 of the RE Act defines renewable energy sources eligible under the RET. The list of eligible renewable energy sources includes solar energy.

Response:

The proposed Development is consistent with the objectives of the RE Act. The Economic Impact Assessment Report by *Essential Economics* notes that the Development will contribute approximately 4.4% of additional capacity to the State's electricity network, supporting Victoria's renewable energy target of 5,400MW of additional installed capacity by 2025 (the cumulative impact when including the Murra Warra Wind Farm has the potential to deliver 12.1% of required new State capacity across the two projects).

The Development is anticipated to be operational by 2020 and make a significant contribution to the national target for large-scale generation of 33,000 GWh in 2020. For a full assessment of the anticipated contribution that the Development will have towards generating electricity from renewable sources and reducing emissions of greenhouse gasses in the electricity sector, refer to the Economic Impact Assessment Report in **Volume 2 Section 6**

5.2 Victorian Legislation

5.2.1 Planning and Environment Act 1987

The Planning and Environment Act 1987 (the PE Act) provides the legal framework for the operation of Victoria's planning system. The Act sets out procedures for preparing and amending the Victorian Planning Provisions and planning schemes, obtaining permits under schemes, settling disputes, enforcing compliance with planning schemes and other administrative procedures.

The main functions of the Act are to:

- set the broad objectives for planning in Victoria
- set the main rules and principles for how the Victorian planning system works
- set up the key planning procedures and statutory instruments in the Victorian planning system
- Define the roles and responsibilities of the Minister, councils, governments, government departments, the community and other stakeholders in the planning system.

Response:

The applications for the proposed Development accord with Section 47 of the PE Act and Sections 5.0 and 6.0 of this report provides an assessment of the proposed Development against the overarching objectives of planning in Victoria.

5.2.2 Environment Effects Act 1978

In Victoria, the assessment of potential environmental impacts or effects of a proposed Development may be required under the *Environment Effects Act 1978 (Vic)* (EE Act). The process under this Act enables statutory decision-makers (Ministers, local government and statutory authorities) to make decisions about whether a development with potentially significant environmental effects should proceed. The EE Act enables the Minister for Planning to decide whether an EES should be prepared for a Development. The *Ministerial Guidelines for Assessment of Environmental Effects* (DSE, 2006) specify criteria under which a development must be referred to the Minister for Planning, for a decision on the need for an EES.

Response:

The Flora and Fauna assessment contained in **Volume 2 Section 2** of this report has assessed the referral criteria relating to flora and fauna. The referral has not been submitted to the Minister for Planning for formal determination as the Development does not trigger any of the referral criteria,

5.2.3 Flora and Fauna Guarantee Act 1988

The *Flora and Fauna Guarantee Act 1988 (Vic)* (FFG Act) is the primary legislation dealing with biodiversity conservation and sustainable use of native ecology in Victoria. Under the FFG Act a permit is required for the potential impacts and removal of listed flora. Details of the proposed removal, destruction or lopping of native vegetation necessary for the construction of the Development must be provided in accordance with the *Permitted clearing of native vegetation - Biodiversity Assessment Guidelines* (Department of Environment and Primary Industries, September 2013) to the satisfaction of the Secretary to the Department of Environment, Land, Water and Planning (or delegate). Native vegetation offsets must also be provided in accordance with these guidelines.

Response:

The Flora and Fauna Assessment found three protected flora species within investigation area; however, a Protected Flora Permit not required. A full Flora and Fauna Assessment is provided at **Volume 2 Section 2**.

5.2.4 Mineral Resources (Sustainable Development) Act 1990

The *Mineral Resources (Sustainable Development) Act* (MRSDA) encourages extractive industries which 'make the best use of, and extract the value from, resources in a way that is compatible with the economic, social and environmental objectives of the State.' Under the MRSDA, a Work Plan is required for extractive industry which must be obtained from the Department of Economic Development, Jobs, Transport and Resources (DEDJTR). A Work Authority to carry out extractive

industry is also required under the MRSDA and the responsible authority for the Work Authority is the Minister for Energy and Resources.

Response:

Approved Planning Permit PA1600128, allows for the development and use of land for a wind energy facility and the ancillary use of the land for a Quarry on land adjacent to the proposed facility. A Work Plan has been approved for the quarry in conjunction with this permit. As it is proposed to also use the quarry to provide requisite building material for a Solar Farm, the Endorsed Work Plan will be amended to include the extraction of additional material (as outlined under section 0).

5.2.5 Aboriginal Heritage Act 2006

The purpose of the *Aboriginal Heritage Act 2006 (Vic) (AH Act)* is to provide for the protection of Aboriginal cultural heritage in Victoria.

Response:

A mandatory CHMP is not required pursuant to the *Aboriginal Heritage Regulations 2007*. No part of the activity area is an area of cultural heritage sensitivity although the activity is a 'high impact activity' (r.6 Aboriginal Heritage Regulations 2007). The full Desktop Cultural Heritage Assessment (DCHA) is available at **Volume 2 Section 3**.

5.2.6 Heritage Act 1995

The primary purpose of the *Heritage Act 1995 (Vic)* is to provide for the protection and conservation of places and objects of cultural heritage significance through the registration of such places and objects via Heritage Victoria. Consent is required from Heritage Victoria for any heritage listed sites affected by the Development.

Response:

A desktop assessment was prepared in compliance with the *Heritage Act 1995 (Vic)* and the PE Act. The desktop assessment reviewed the historical background, archaeological background (including previous archaeological and heritage studies) and cultural heritage registers. The report concluded that no mandatory Historic Cultural Heritage Assessment would be required pursuant to the *Heritage Act 1995 (Vic)*. The full Heritage Assessment is available at **Volume 2 Section 3**.

5.2.7 Environmental Protection Act (1970)

The *Environmental Protection Act 1970* (the EP Act) was at its inception only the second Act in the world to deal with the whole of the environment in a systematic and integrated way. The EP Act is outcome oriented, with a basic philosophy of preventing pollution and environmental damage by setting environmental quality objectives and establishing programs to meet them. Key aims of the EP Act include sustainable use and holistic management of the environment, ensuring consultative processes are adopted so that community input is a key driver of environment protection goals and programs and encouraging a co-operative approach to environment protection. To achieve these aims, the EP Act identifies the following principles:

Response:

Solar farms are not scheduled premises under the Environment Protection Regulations and hence works approval or licensing from the EPA is not required.

5.3 Victorian Policy

5.3.1 Wimmera Southern Mallee Regional Growth Plan, Victorian Government, (2014)

This *Wimmera Southern Mallee Regional Growth Plan (2014)* provides a regional approach to land use planning in the Wimmera Southern Mallee Region. It has been included as part of the State Planning Policy Framework in all planning schemes (refer to Clause 11.13).

Part B of the Regional Growth Plan (RGP) provides a regional overview. Agriculture will remain the most important part of the regional economy but there is a need to support diversification, which may include new economic sectors as well as an expanded commodity mix, to reduce reliance on

traditional agriculture and exposure to external factors. Other potential future growth industries include food processing, mining, engineering and manufacturing, renewable energy and tourism.

Tourism, mining and renewable energy generation are industries that offer potential diversification opportunities and may be located in rural areas, complementing agricultural growth and diversification. Uses which facilitate diversification of rural land use should be encouraged where they:

- Build on existing infrastructure;
- Have close synergies with nearby uses or assets;
- Do not compromise the region's agricultural significance; and
- Are supported by local planning policy and other controls to manage potential land use conflicts.

Part C Section 10.5 Energy seeks to help diversify the local economy by generating energy locally from a diverse range of renewable sources. Renewable energy sources include wind, solar, geothermal and bioenergy. The region has a number of competitive advantages including its low population density, solar access and ready fuel sources for some forms of energy generation. The financial viability of local energy production will improve in a carbon-constrained economy.

The strategy notes that the northern parts of the region have excellent potential for solar energy generation. Land use policies, strategies and actions should:

- Provide for the expansion of energy supply infrastructure where it is feasible and would support the establishment of new industry or the expansion of existing industry;
- Encourage local energy generation to help diversify the local economy and improve sustainability outcomes; and
- Support the development of energy facilities but ensure they are located to minimise conflicts with identified environmental assets, residential areas and the transport network.

Response:

The Development has been located within the northern part of the Wimmera Southern Mallee Region, where the solar irradiance is high and well suited to solar electricity generation. It is also located to take advantage of the existing Horsham to Red Cliffs 220Kv line and the existing approved terminal station for the adjacent approved wind farm, facilitating connection to the electricity grid.

The Development site only represents a small percentage of productive agricultural land within the study area and the income from operator payments will be greater than the average farm income from the land. The proposed siting of the Development also ensures that landowners will continue to have sufficient land for agricultural purposes and the impacts associated with the loss of this agricultural land outweighed by the economic benefits that the Development will bring to land owners and the broader region. In addition, it is noted that long term losses to agricultural land are negligible, as the land can be rehabilitated for agricultural uses when the Solar Farm is decommissioned.

Sections 5.0 and 6.0 of this report provide summaries of supporting technical assessments and assess the Development against a full range of relevant economic, social and environmental impacts, highlighting the additional benefits of the Development and supporting the choice of location within the region. Full copies of supporting technical assessments are also available in **Volume 2 Technical Appendices**.

5.4 State Planning Policy Framework

The Rural City of Horsham and Yarriambiack Shire Planning Schemes each contain the State Planning Policy Framework (SPPF). The SPPF provides a context for spatial planning and decision making by planning and responsible authorities and identifies aspects of State planning policy which they are to take into account and give effect in planning and administering their respective areas.

Table 7 identifies key policies and objectives within the SPPF that are relevant to the proposed use and development.

Table 7 State Planning Policy Framework

Relevant Policy	Response
<p>Clause 10.02 – Goals identifies that the State Planning Policy Framework seeks to ensure that the objectives of planning in Victoria are fostered through appropriate land use and development planning policies and practices. The objectives of planning in Victoria are:</p> <ul style="list-style-type: none"> • Provide for the fair, orderly, economic and sustainable use and development of land, • Provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity. • Secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria • Conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value. • Protect public utilities and other facilities for the benefit of the community. • Facilitate the development in accordance with the above objectives. • To balance the present and future interests of all Victoria. 	<p>The policies and objectives of planning in Victoria are fostered through the land use and development policies contained in the SPPF.</p> <p>The consistency of the proposed Development against these policies is further explored through the SPPF and responded to directly in the following sections of this column.</p>
<p>Clause 11 – Settlement identifies that ‘planning is to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure’.</p> <p>Clause 11.05 – Regional development and Clause 11.13 – Wimmera Southern Mallee regional growth contain a number of objectives and strategies that seek to plan for the needs of Victorians and support the regional growth of the Wimmera Southern Mallee Region.</p> <p>Clause 11.05-1 – Regional settlement networks seeks to promote the sustainable growth and development of regional Victoria through a network of settlements identified in the Regional Victoria Settlement Framework Plan. Map 1 – Regional Victoria Settlement Framework indicates that the subject site is located within the Wimmera Southern Mallee Region, north of Horsham which is identified as a regional city with the ability to promote growth.</p> <p>Clause 11.13-1 – Networked settlements seeks to encourage growth throughout the region and create a network of integrated and prosperous settlements.</p> <p>Clause 11.13-4 – Agricultural productivity aims to protect key agricultural resources, maintain productivity and support the development of industry. The following strategies are identified in</p>	<p>The policies and objectives set out in subsections of Clause 11 seek to anticipate and respond to the needs of existing and future communities in Victoria. It is considered that the proposed Solar Farm facility is highly consistent with these policies and objectives as:</p> <ul style="list-style-type: none"> • The Development site is located near the regional city of Horsham which is identified in the SPPF as a regional city with the ability to support and promote growth. • Impacts to agricultural land are considered minimal as the proposed Development only represents a small percentage of productive agricultural land within the study area and has been sited to ensure that landowners can continue to operate the balance of the land for agricultural purposes. • The Development will facilitate agricultural diversification of the regional economy and take advantage of the good levels of solar radiation. • The Development will provide a long-term income to landowners from the operator, providing profits that are greater than the average farm income of the land and will support local agricultural industries. • The Development is consistent with strategies identified within the SPPF that

Relevant Policy	Response
<p>support of this strategy:</p> <ul style="list-style-type: none"> • Protect land and environmental resources which make a significant contribution to the region's agricultural productivity. • Support local industries, activities and infrastructure which complement and enhance the region's agricultural sector. • Facilitate agricultural diversification and value adding that takes advantage of natural assets and provides appropriate and timely infrastructure to realise these opportunities. <p>Clause 11.13-5 – A diversified economy identifies the need to use the region's assets to facilitate the diversification of the economy and build a resilient community. Key strategies identified within the Clause that are relevant in this instance include:</p> <ul style="list-style-type: none"> • Facilitate diversification of the regional economy and capitalise on economic development opportunities through building the region's assets, particularly agriculture, energy, mining and tourism. <p>Clause 11.13-6 – Resilient communities endeavours to support planning for adaptation to changes in climate. Key strategies identified within the Clause encourage:</p> <ul style="list-style-type: none"> • Flexible approaches to rural land use and infrastructure which support a transition of agricultural activities over time • Support the development of locally generated renewable energy <p>Clause 11.13-8 – Infrastructure aims to identify infrastructure required to support growth. Key strategies seek to:</p> <ul style="list-style-type: none"> • Provide for the expansion of energy supply infrastructure where it is feasible and would support the establishment of new industry or the expansion of existing industry. • Facilitate local energy generation to help diversify the local economy and improve sustainability outcomes. 	<p>encourage flexible approaches to the use of rural land and will support the development of locally generated renewable energy</p> <ul style="list-style-type: none"> • The Development will allow for the expansion of the renewable energies sector and promote sustainable growth through the provision of clean energy to approximately 83,000 homes.
<p>Clause 12 – Environmental Landscapes identifies that planning should help to protect the health of ecological systems and the biodiversity they support and conserve areas with identified environmental and landscape values. Sub-clauses of Clause 12 contain a number of objectives and strategies that seek to protect the health of ecological systems and the biodiversity they support.</p> <p>Clause 12.01-1 Protection of biodiversity seeks to assist the protection and conservation of Victoria's biodiversity, including important habitat for Victoria's flora and fauna and other strategically valuable biodiversity sites.</p> <p>Clause 12.01-2 Native vegetation management</p>	<p>A Flora and Fauna Assessment of the site found three protected flora species within investigation area.</p> <p>The proposed Development seeks to accord with objectives identified in Clause 12 by proposing a site plan that is consistent with recommendations from the Flora and Fauna Report and providing a site plan that avoids impacts on most of the key ecological values and patches of remnant native vegetation. Notably, scattered Buloke have been avoided and treated as no-go zones that will not be encroached upon during or after construction.</p>

Relevant Policy	Response
<p>aims to ensure that permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity. Clause 12.04-2 – Landscapes seeks to protect landscapes and significant open spaces that contribute to character, identity and sustainable environments.</p>	<p>A full Flora and Fauna Assessment is provided at Volume 2 Section 2.</p>
<p>Clause 13 – Environmental Risks acknowledges that planning should adopt a best practice environmental management and risk management approach which aims to avoid or minimise environmental degradation and hazards. Clause 13.04-1 – Noise abatement contains objectives and strategies that encourage best practices that seek to <i>assist the control of noise effects on sensitive land uses</i>. A key strategy identified within the Clause aim to ensure that development is not prejudiced and community amenity is not reduced by noise emissions.</p>	<p>An Environmental Management Plan has been prepared to ensure that the Development accords with best practice environmental management and risk management approaches to avoid environmental degradation and hazards.</p> <p>An Environmental Noise Assessment has also been prepared which predicted that the Development would meet regulatory acoustic requirement. The assessment also considered the cumulative noise impact of the approved Wind Farm and proposed Solar Farm, which found that the combined noise emissions of the two uses would not prejudice community amenity (See Volume 2 Section 8)</p> <p>Environmental benefits of the Development include:</p> <ul style="list-style-type: none"> • During operation, solar developments produce zero emissions. • Localised renewable energy sources are critical to renewable energy production, reduction in greenhouse gas emissions and addressing peak power demands from existing non-renewable sources. • Reduction in carbon emissions from electricity consumption and exporting surplus renewable energy to the grid. • Reduction in carbon emissions and long term reduction in power prices for communities situated near solar power plants. • Solar farms are a virtually silent producer of energy.
<p>Clause 14 – Natural Resource Management identifies that planning is to assist in the conservation and wise use of natural resources including energy, water, land, stone and minerals to support both environmental quality and sustainable development. As such, Clause 14.01 – Agriculture and Clause 14.03 – Resource exploration and extraction contain a number of objectives and strategies that seek to guide the conservation and use of natural resources. Clause 14.01-1 – Protection of agricultural land aims to protect productive farmland which is of strategic significance in the local or regional context and identifies a number of key strategies including:</p>	<p>The policies and objectives set out in subsections of Clause 14 assist in the conservation and wise use of natural resources including land and stone.</p> <p>It is considered that the proposed Development is highly consistent with these policies and objectives as:</p> <ul style="list-style-type: none"> • Impacts to agricultural land are considered minimal as the proposed Solar Farm only represents a small percentage of productive agricultural land within the region. • The Development has been sited to ensure

Relevant Policy	Response
<ul style="list-style-type: none"> • In considering a proposal to develop agricultural land, the following factors must be considered: <ul style="list-style-type: none"> - The desirability and impacts of removing the land from primary production, given its agricultural productivity. - The impacts of the proposed development on the continuation of primary production on adjacent land. - The compatibility between the proposed or likely development and the existing uses of the surrounding land. - Assessment of the land capability. <p>Clause 14.01-2 – Sustainable agricultural land use seeks to encourage sustainable agricultural land use by implementing the following key strategies:</p> <ul style="list-style-type: none"> • Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources. • Encourage sustainable agricultural and associated rural land use and support and assist the development of innovative approaches to sustainable practices. <p>Clause 14.03 – Resource exploration and extraction endeavours to encourage exploration and extraction of natural resources in accordance with acceptable environmental standards and to provide a planning approval process that is consistent with the relevant legislation. Relevant strategies aim to protect the opportunity for exploration and extraction of natural resources where this is consistent with overall planning consideration and application of acceptable environmental practice.</p>	<p>that landowners can continue to operate the balance of the land for agricultural purposes.</p> <ul style="list-style-type: none"> • The Development will allow for the sustainable use of agricultural land and facilitate agricultural diversification that will support the regional economy and take advantage of the good levels of solar radiation. • The Development is consistent with strategies identified within the SPPF that encourage flexible approaches to the use of rural land and will support the development of locally generated renewable energy. • The proposed ancillary use of the land for stone extraction (a quarry) will be undertaken in accordance with environmental standards and provide materials to facilitate the construction of the proposed Development. It is therefore considered that the quarry would support the Development, is consistent with key planning policies and objectives and reduce emissions and traffic impacts associated with transport of materials.
<p>Clause 15 – Built environment and Heritage Identifies that planning should ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value.</p> <p>Clause 15.02 – Sustainable Development and Clause 15.03 – Heritage contain a number of objectives and strategies that seek to protect and enhance landscape and built form.</p> <p>Clause 15.02-1 – Energy and resource efficiency aims to encourage land use and development that is consistent with the efficient use of energy and the minimisation of greenhouse gas emissions. A key strategy aims to improve efficiency in energy use through greater use of renewable energy.</p> <p>Clause 15.03-1 – Heritage conservation seeks to ensure the conservation of places of heritage</p>	<p>The proposed Development will appropriately respond to its landscape and accord with key objectives and strategies identified in the SPPF as:</p> <ul style="list-style-type: none"> • The proposed Development will be consistent with the emerging landscape character of the area which contains a mixture of rural agricultural and renewable energy uses. • The proposed Development will result in the construction of a renewable energy facility that will generate electricity from a renewable source and reduce greenhouse gas emissions in the electricity centre. • The Development will provide clean energy to approximately 83,000 homes. • A DCHA has been prepared to assess built form and cultural heritage on the site. The assessment concluded that there are no

Relevant Policy	Response
<p>significance. Clause 15.03-2 – Aboriginal cultural heritage endeavours to ensure the protection and conservation of places of Aboriginal cultural heritage significance.</p>	<p>heritage places that will be affected by the development and that a Mandatory CHMP is not required in this instance.</p>
<p>Clause 17 – Economic Development acknowledges that planning is to provide for a strong and innovative economy, where all sectors of the economy are critical to economic prosperity. As well as contribute to the economic well-being of communities and State as a whole by supporting and fostering economic growth and development. <i>Clause 17.01 – Commercial, Clause 17.02 – Industry</i> contain a number of objectives and strategies that seek provide for a strong and innovative economy. Clause 17.01-1 – Business encourages development which meets the communities' needs for retail, entertainment, office and other commercial services and provides net community benefit in relation to accessibility, efficient infrastructure use and the aggregation and sustainability of commercial facilities.</p>	<p>It is considered that the proposed development embodies economically, environmentally and socially sustainable foundations and will support economic growth and wellbeing in the region by capitalising on the emerging renewable energy market.</p> <p>An estimated \$312 million in investment during construction phases and an Economic Impact Assessment has been prepared to evaluate the proposed Development. A full copy of this assessment can be found in Volume 2 Section 6 of this report. Key findings of the report illustrate that the construction and operation of the facility will provide a variety of economic benefits including:</p> <ul style="list-style-type: none"> • The Development will support the equivalent of 120 direct and 200 indirect full time employees over the construction period (12 to 18 months). • During operation, the equivalent of 3 direct and 9 indirect full time positions will be supported by the facility. • The generation of accommodation demand to boost local accommodation operators during off peak times. • It is estimated that construction workers from outside the region will inject up to \$1.5 million (2016 dollars) in additional spending to the regional economy, supporting around 7.5 jobs in the service sector in Horsham and the smaller surrounding towns. • Ongoing economic stimulus associated with new local wage spending and returns to landowners is estimated at \$15.0 million over 25 years (2016 dollars). • The Murra Warra Solar and Wind Farm developments present a unique environmental experience for Victoria which could potentially stimulate small-scale tourism initiatives such as viewing and education opportunities for visitors to the region. <p>There is a good match of skills and resources available in the region creating significant opportunities for businesses and the local labour force.</p>
<p>Clause 19 – Infrastructure identifies that growth and redevelopment of settlements should be planned in a manner that allows for the logical and</p>	<p>The Development would be co-located with an approved Wind Farm Facility and will ensure the logical and efficient provision and maintenance</p>

Relevant Policy	Response
<p>efficient provision and maintenance of infrastructure.</p> <p>Clause 19.01 – Renewable energy contains objectives and strategies that seek to provide for a strong and innovative economy.</p> <p>Clause 19.01-1 – Provision of renewable energy seeks to promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met. Key strategies seek to:</p> <ul style="list-style-type: none"> • Facilitate renewable energy development in appropriate locations. • Protect energy infrastructure against competing and incompatible uses. • Develop appropriate infrastructure to meet community demand for energy services and setting aside suitable land for future energy infrastructure. <p>In considering proposals for renewable energy, consideration should be given to the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effect of the proposal on local community and environment.</p>	<p>of infrastructure. The proposed facility is consistent with objectives and key policies as follows:</p> <ul style="list-style-type: none"> • The location of the Development is the outcome of a detailed site selection and design program that will allow the Development to be co-located with an approved Wind Farm Facility, in close proximity to an existing transmission line. • The Development will be surrounded by compatible agricultural uses in an area with a small population which reduces public safety and amenity risks associated with locating a renewable energy facility in a more densely populated area. • The Development will contribute approximately 4.4% of additional capacity to the State’s electricity network, supporting Victoria’s renewable energy target of 5,400MW of additional installed capacity by 2025. • The Development will deliver economic benefits to the region and will have a negligible impact on remnant native vegetation and the environment. A full assessment of economic and environmental matters can be found in Volume 2 Section 6 of this report.

5.5 Local Planning Policy Provisions

The RCH and YSC Planning Schemes each contain a Local Planning Policy Framework (LPPF) including a Municipal Strategic Statement (MSS) and local planning policies. The MSS is a concise statement of the key strategic planning, land use and development objectives for the municipality and the strategies for achieving the objectives. It seeks to further the objectives of planning in Victoria and provide a local context to further LPPF objectives and strategies.

5.5.1 Horsham LPPF

The Horsham LPPF (including the existing and proposed MSS) is summarised in Table 8.

Table 8 Rural City of Horsham LPPF

Clause	Response
Municipal Strategic Statement	
<p>Clause 21.02 – Key Influences There are a number of significant issues and influences that will have an impact on future land use and development in Horsham Rural City.</p> <p>Clause 21.02-5 – Environment identifies the region as one of the most reliable grain growing areas in Australia and is home to 10% of the state’s sheep flock. Little Desert National Park occupies the north-west portion of the municipality and the lesser known Natimuk-Douglas Wetlands, consisting of more than thirty lakes, also have significant conservation values.</p>	<p>The proposed co-location of the Development with the approved Murra Warra Wind Farm will enhance the region’s image as key centre for renewable energies in Victoria, strengthening and diversifying the region’s economy whilst having negligible impact on the region’s agricultural industry and conservation values.</p>
<p>Clause 21.03 – Vision – Strategic Framework outlines Council’s vision for the municipality, which has arisen from the issues and influences discussed above (Clause 21.02). Key elements of the Council Plan Vision that are relevant in this instance include:</p> <ul style="list-style-type: none"> • A leader of the region’s economic, cultural and social focus. • A community that is proud of its achievements, supportive of a caring environment and which provides opportunities for growth and prosperity. • A community that recognises the importance of primary production, agricultural value adding and service industries for our sustainability. <p>In addition, the Land Use Planning Vision for the Horsham Rural City Council will seek to manage the resources of the municipality in a sustainable manner, so as to secure prosperity for agriculture, industry and commerce and maintain and enhance the social and cultural quality of life for local residents.</p>	<p>The proposed Development is considered to be consistent with the vision for the municipality as follows:</p> <ul style="list-style-type: none"> • The co-location of the Development adjacent to the approved Murra Warra Wind Farm will ensure that the region is a leader in the production of renewable energies and an industry that embodies economically, environmentally and socially sustainable foundations. • The Development represents a significant investment that will support sustainable growth and prosperity within the region that the community can be proud of. • The proposed Development will not result in significant impacts to the agricultural value of the region.
<p>Clause 21.04 – Objectives, Strategies, Implementation contains key objectives and directions that have arisen from the issues and influences identified and the vision proposed.</p> <p>Clause 21.04-2 – Managing the rural environment contains a number of objectives and strategies that seek to plan for the needs of Victorians and support the regional growth of the Wimmera Southern Mallee Region.</p> <p>Clause 21.04-2 – Managing the Rural Environment acknowledges the importance of the rural environment to the economy and amenity of the shire and identifies the following relevant objectives:</p> <ul style="list-style-type: none"> • Protect the quality of the land and water resources of the municipality through sound environmental management. 	<p>The Development is considered highly consistent with key objectives and strategies identified in Clause 21.04 as follows:</p> <ul style="list-style-type: none"> • The proposed location will ensure that the balance of land can continue to operate for agricultural purposes and will minimise impacts to agricultural land. • The Development will provide additional support and income to land owners, providing opportunities for the ongoing development of rural and agricultural industries and ensuring the ongoing viability of the area • It is not anticipated that the Development will have an impact on water resources in the area. • The proposed layout seeks to limit impacts

Clause	Response
<ul style="list-style-type: none"> Protect and enhance native vegetation, biodiversity and ecological processes and endeavour to achieve net gain in the area and quality of native vegetation throughout the municipality. Promote the development of the primary resources of Horsham Rural City by preventing the fragmentation of productive agricultural land and through the encouragement of sustainable and innovative land management practices and by sensitive management of the mineral sand resources. <p>In support of the above objectives, the Clause identifies the following relevant strategies:</p> <ul style="list-style-type: none"> Maintain and upgrade rural infrastructure to support the ongoing development of rural industries. Facilitate and encourage the development of mineral sand deposits and associated activity in an appropriate and responsible manner. Assist in the protection of Victorian Rare and Threatened Species of Flora and Fauna and to promote the protection of remnant vegetation including road and rail reserves. 	to native vegetation and biodiversity.
Local Planning Policies	
<p>Clause 22.02 – Resource Protection Policy applies to all land in the municipality and acknowledges the correlation between the protection and appropriate management of land and water resources; and the health of the local environment, primary production and the regional economy. The key objective of the Clause is <i>to ensure the thorough assessment of applications for use and/or development of land which have the potential to impact upon land and water resources.</i></p>	As noted above, the proposed location of the Development will ensure that the balance of land can continue to operate for agricultural purposes and minimise impacts to agricultural land. In addition, the Development will provide income support to local land owners and be suitable for agricultural use following the decommissioning of the Development. It is therefore considered that the proposed Development will be a sustainable land use that will complement adjacent agricultural uses and the regional economy; and is therefore highly consistent with local planning policy.

5.5.2 Yarriambiack LPPF

Yarriambiack LPPF (including the existing and proposed MSS) is summarised in Table 9 below.

Table 9 Yarriambiack Shire LPPF

Clause	Summary
Municipal Strategic Statement	
<p>Clause 21.02 – Overview of Yarriambiack Shire identifies key characteristics contribute towards the identity of Yarriambiack Shire. Some of the key elements include:</p> <ul style="list-style-type: none"> Agriculture is the major employer in the Shire. The emergence of potentially new industries such as ecotourism based on the unique natural resources of the region, mineral sands recovery, services and value adding of primary 	The proposed Development will help to diversify the region's economy and provide new industries that take advantage of the region's high levels of solar radiation and existing access to Victoria's electricity sector. In addition, the approval of the quarry will enable the quarry that is ancillary to the Murra Warra Wind Farm to be expanded to provide construction materials for the Development and take advantages of

Clause	Summary
products and diversification of agricultural production.	natural resources in the region.
<p>Clause 21.04 – Land Use and Development Vision sets out the land use planning and development vision for the Shire, which commits the Yarriambiack Shire Council, with the participation of the community, to engage in decision making and actions on land use and development which are <i>ecologically sustainable to achieve the objectives of high agricultural productivity, an expanded agricultural and non-agricultural economic base, conservation of natural and built resources and equitable access to services and facilities.</i></p> <p>To achieve this vision, the Shire will plan in partnership with the community for the development of the Shire as follows:</p> <ul style="list-style-type: none"> • Protecting rural land for the purposes of agricultural production and value adding industries. • Focusing urban growth and economic development in and around existing townships in the Shire. • Protect items, places and areas of natural and cultural heritage. • Support sustainable economic development including agriculture and new industries based on the Shire’s built and natural assets and locational advantages. 	<p>The Development is considered to be consistent with the vision for the municipality as follows:</p> <ul style="list-style-type: none"> • The co-location of the Development adjacent to the Murra Warra Wind Farm will ensure that the region is a leader in the production of renewable energies and an industry that embodies economically, environmentally and socially sustainable foundations. • The proposed Development will not significantly impact agricultural production in the region and provide to landowners and create more opportunities for investment into the region’s agricultural industry. • The proposed Development has been sited to ensure that it does not harm places or areas of natural and cultural heritage.
<p>Clause 21.07 – A planned sustainable future scenario seeks to:</p> <ul style="list-style-type: none"> • Build robust local economics in townships and in the Shire. • Manage rural land sustainably and discourage use and development which has the potential to restrict or adversely affect rural activities 	<p>As outlined above, the Development will manage rural land sustainability as it will not significantly impact agricultural production in the area and will help to diversify the region’s economy with the establishment of a robust renewable energies sector. That will support local economies and townships in the Shire.</p>
<p>Clause 21.08-2 – Sustainable Land Management and Productivity notes the importance of agricultural production to the shire and identifies the following key strategies:</p> <ul style="list-style-type: none"> • Protect agricultural land as an economic resource. • Discourage non-agricultural uses and developments in areas of high quality agricultural land. • Encourage agricultural diversity and promote opportunities for new farming enterprises. 	<p>The Development is considered highly consistent with sustainable land management and productivity policies of the LPPF. The proposed Development will not significantly impact the supply of agricultural land in the region. In addition, it is expected that the Development will support landowners and subsequently support investment for greater agricultural diversity and new farming enterprises in the region, ensuring the importance of agriculture as an economic resource for the Shire.</p>
Local Planning Policy Framework	
<p>Clause 22.01 – Settlement contains a number of subclauses which address key issues associated with settlement including urban growth and increased housing densities.</p>	<p>The LVIA (refer to Volume 2 Section 9) assesses the visual impacts of the Development and concludes that <i>the greatest overall visual impact from publicly accessible locations</i> has</p>

Clause	Summary
<p>Clause 22.01-3 – Building Lines and Height applies to the entire Shire and seeks to:</p> <ul style="list-style-type: none"> • Ensure that development is appropriately located and sited having regard to streetscape and environmental attributes of residential areas. • Ensure that rural development is sited so as not to prejudice the landscape features and environmental attributes of the surrounding area. <p>In rural zones, it is policy that building heights have regard to:</p> <ul style="list-style-type: none"> • The use of the natural features to screen the proposed development. • Design of both buildings and landscaping to allow the development to be accommodated by the surrounding landscape. • The proposed landscaping of the site. • The existing setbacks of abutting land. <p>In addition, the following decision guidelines are noted:</p> <ul style="list-style-type: none"> • The effect of the proposed building or works on the amenity of the area. • The importance of the undeveloped natural vistas along the major highways and the importance of the visual presentation of these areas. • The effect and operation of public roads. 	<p>been assessed as negligible and will not negatively impact the Wimmera landscape. The Development is therefore considered to be consistent with relevant local objectives and strategies as follows:</p> <ul style="list-style-type: none"> • The proposed location will be appropriately located within an emerging renewable energies precinct and surrounded by agricultural land. • The surrounding area contains low population levels and it is therefore considered that impacts to residential land uses will be minimal. • There are opportunities for landscape features including vegetation and future wind farm infrastructure that will minimise the overall impact of the Development on the character of the area. • Amenity impacts associated with the Development are expected to be minimal and it is not anticipated that the development and use of the facility will affect the operation of public roads. •
<p>Clause 22.02 – Rural applies to all land in the Farming Zone and acknowledges agriculture as the most significant industry in the shire.</p> <p>Clause 22.01-1 – Rural land and Clause 22.2-2 – Road Construction and Access in the Rural Zones contain a number of objectives and strategies that seek to the sustainable management and protection of agricultural land in the region.</p> <p>Clause 22.01-1 – Rural land identifies the following key objectives:</p> <ul style="list-style-type: none"> • Protect the natural and physical resources upon which agricultural industries rely. • Prevent the unsustainable use of agricultural land which results in the loss of the quantity or quality of natural resources and limits the realisation of its full productive potential. <p>Clause 22.02-2 – Road Construction and Access in the Rural Zones applies to the requirement for adequate road construction and access to service new development in Rural zones. Key objectives seek to ensure:</p> <ul style="list-style-type: none"> • The improvement and upgrading of roads and infrastructure is commensurate with the 	<p>The proposed Development of a Solar Farm Facility on the subject site is considered highly consistent with key rural local planning policies. Notably:</p> <ul style="list-style-type: none"> • The proposed siting of the Development will not significantly impact agricultural production in the region and long term impacts to agricultural land will be minimal as land will be able to return to agricultural use following the decommissioning of the facility. • It is expected that leasing arrangements associated with the Development will benefit land owners and see further investment and improvement in local agricultural operations. • The proposed location benefits from good levels of vehicular access that will be improved in accordance with the recommendations of the Transport Impact Assessment. For a full copy of this assessment, please refer to Volume 2 Section 5

Clause	Summary
<p>expected impacts of proposed uses and developments.</p> <ul style="list-style-type: none"> The proposed uses and developments do not restrict existing road access. That all new uses and developments are provided with two way access and that access is safe and efficient. 	
<p>Clause 22.03 – Environmental Management applies to land and water in Rural Zones and focuses on the sustainable management of natural resources.</p> <p>Clause 22.03-1 Catchment and Land Protection seeks to:</p> <ul style="list-style-type: none"> Ensure the sustainable development of natural resources of soil, water, flora, fauna, air and ecosystems. Ensure that the use and development of land and water takes into account impacts on the quality and quantity of natural resources. <p>Clause 22.03-4 – Rare and Threatened Species seeks to:</p> <ul style="list-style-type: none"> Maintain and enhance biodiversity in Yarriambiack Shire. Maintain and enhance the habitat particularly critical habituate, of Victorian Rare and Threatened Flora and Fauna species including but not limited to those listed under Schedule 2 of the Flora and Fauna Guarantee Act 1988. To protect broad vegetation types or ecological vegetarian classes, or floristic communities that are classified as depleted, rare or endangered at the state wide level. 	<p>A full Flora and Fauna Report can be found in Volume 2 Section 2 of this report.</p> <p>The proposed layout of the facility avoids impacts on most of the key ecological values and patches of remnant native vegetation and the scattered Buloke have been avoided. These areas of native vegetation will be treated as no-go zones and will not be encroached upon during or after construction.</p> <p>An Environmental Management Plan has also been prepared in association with the proposed Development and will provide further checks and balances to ensure the protection of the environment. A full version of this document can be found in Volume 2 Section 11 of this report.</p>
<p>Clause 22.04 – Infrastructure identifies a number of infrastructure related policies.</p> <p>Clause 22.04-1 – Effluent Disposal and Water Quality applies to areas that are not presently serviced with reticulated sewerage and seeks to ensure that <i>use and development complies with the relevant State requirements and guidelines</i> and <i>ensures that surface and ground water quality is not adversely affected by use and development.</i></p>	<p>The Development will comply with relevant State requirements and guidelines, ensuring that surface and ground water quality is not adversely affected by the proposed facility.</p>

5.6 Zoning and Overlay Provisions

5.6.1 Farming Zone

The land subject to the proposed use and development is entirely located within the **Farming Zone (FZ)**. Clause 35.07 – Farming Zone (refer to Figure 9) of the Horsham and Yarriambiack Planning Schemes identifies the purpose of the zone as follows:

- *Implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *Provide for the use of land for agriculture.*
- *Encourage the retention of productive agricultural land.*
- *Ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
- *Encourage the retention of employment and population to support rural communities.*
- *Encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*

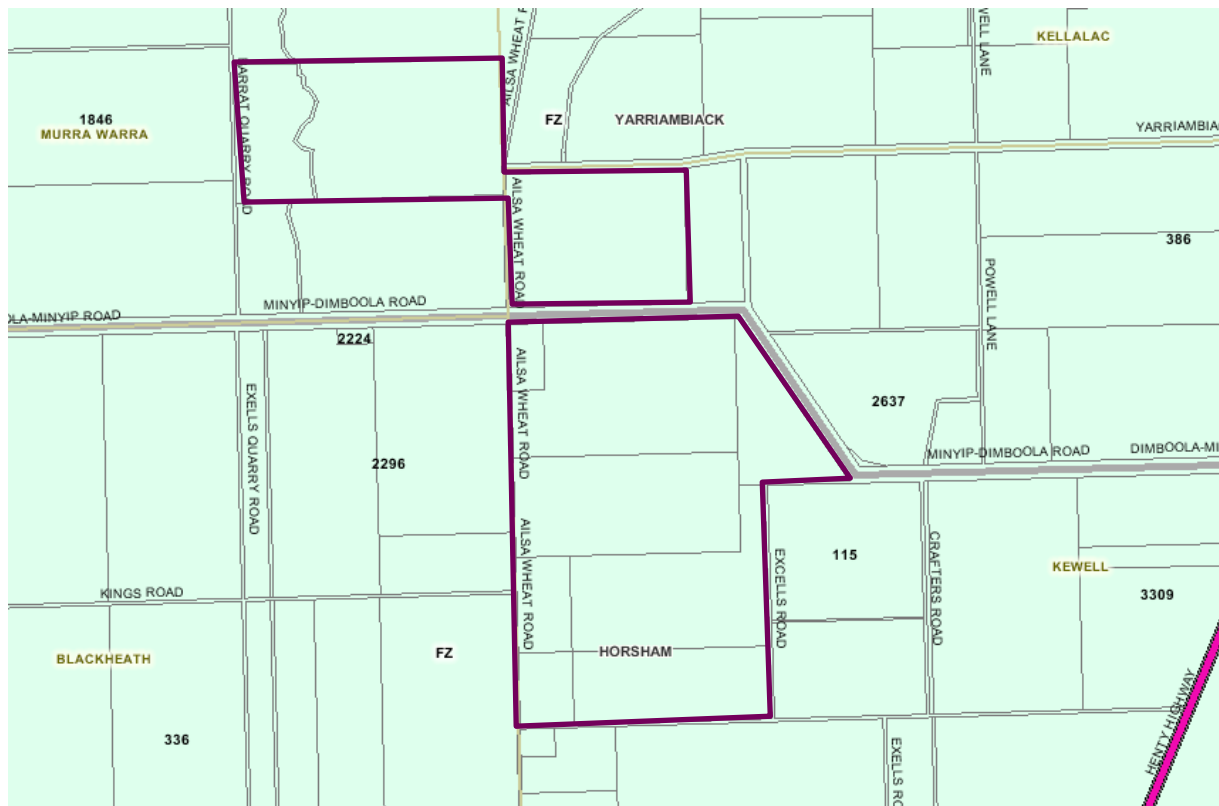


Figure 9 Farming Zone and subject site

Pursuant to Clause 35.07-1 – Table of Uses and Clause 35.07-4 – Buildings and Works, Table 10 identifies relevant permit triggers for each application.

Table 10 Land Use Permit Triggers

Land Use	Permit Requirements
Rural City of Horsham	
Application A	
Minor Utility Station	Listed as an <i>as of right use</i> and does not require a Planning Permit for use.
Renewable Energy Facility (other than a wind energy facility)	A permit is required for the use and must meet the requirements of Clause 52.42. A permit is required for buildings and works.
Yarriambiack	
Application B	
Minor Utility Station	Listed as an <i>as of right use</i> and does not require a Planning Permit for use.
Utility Installation	Planning Permit PA1600129 approves the use and development of land for a utility installation (substation). A permit is required for additional buildings and works associated with the development.
Renewable Energy Facility (other than a wind energy facility)	A permit is required for the use and must meet the requirements of Clause 52.42. A permit is required for buildings and works.
Stone Extraction (Quarry)	Not listed in Clause 35.07-1. A permit is therefore required for use and buildings and works.
Application C	
Renewable Energy Facility (other than a wind energy facility)	A permit is required for the use and must meet the requirements of Clause 52.42. A permit is required for buildings and works.

Clause 35.07-6 – Decision Guidelines, identifies guidelines that the responsible authority must consider, as appropriate, including:

- *The capability of the land to accommodate the proposed use or development including the disposal of effluent.*
- *How the use or development relates to sustainable land management.*
- *Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.*
- *How the use and development makes use of existing infrastructure and services.*
- *Whether the use or development will support and enhance agricultural production.*
- *Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.*
- *The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.*
- *The impact of the proposal on the natural physical features and resource of the area, in particular on soil and water quality.*
- *The impact of the use or development on the flora and fauna on the site and its surrounds.*

- *The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.*
- *The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.*
- *The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.*
- *The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.*

Pursuant to Clause 35.07-7 – Advertising signs, advertising sign requirements are at Clause 52.05, Category 4.

Response:

The Development is appropriately located and sited within the Farming Zone. The Development Area is predominantly used for broad acre cropping including grain production. *Planning Practice Note 42: Applying the Rural Zones* (DELWP: 2013) defines the amenity of Farming Zones as ‘...the Farming Zone is designed to encourage diverse farming practices, some of which can have significant off-site impacts. For this reason, the level of amenity that can be expected in this zone will usually not be compatible with sensitive uses, particularly housing’.

Whilst solar panels cover a large percentage of the land area upon which they are placed, the space in between the panels has on many other solar farms across the world been successfully used to graze livestock. This is consistent with the policy directions of the Horsham and Yarriambiack Planning Schemes, which seek to protect land within the FZ for continued use for agriculture especially productive, soil based agriculture.

There are also few non-farming/agricultural uses (such as the local cemetery and community hall) in the vicinity of the site and none would be adversely affected by a wind farm. The site has adequate physical separation from sensitive uses. It is anticipated that adjoining and nearby land uses will retain an excellent level of amenity. Those dwellings and former dwellings located in proximity to the Development Area have landowner agreements in place. With respect to environmental impacts of the Development, refer to Sections 6.2, 6.3, 6.5, 6.10 and 6.12 of this report.

5.6.2 Environmental Significance Overlay

A small segment of the Development which is located within the boundaries of Yarriambiack Shire is affected by Clause 42.01 – Environmental Significance Overlay. The purpose of this overlay is:

- Implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- Identify areas where the development of land may be affected by environmental constraints; and
- Ensure that development is compatible with identified environmental values.

Schedule 3 to the Environmental Significance Overlay (ESO3) seeks to address *Channel and Reservoir Protection* and seeks to:

- Maintain and enhance the quality and supply irrigation and domestic water throughout the Wimmera region.
- Protect water reservoirs and channels from potential sources of pollution.
- Control the development of land in the vicinity of water supply reservoirs and supply channels.
- Prevent the unauthorised diversion of water into or from water channels.

Pursuant to Clause 42.01-2 – Permit Requirement, Table 11 identifies relevant permit triggers for ESO3:

Table 11 Permit Triggers of Clause 42.01-2

Permit Trigger	Permit Requirements
Yarriambiack	
Application B and C	
Buildings and Works	A permit is required to construct a building or construct or carry out works including a fence within 20 metres of the toe of a channel.

ESO3 also notes the following relevant decision guidelines that must be given consideration:

- The comments of the Wimmera Mallee Water or any other relevant authority.
- The need to prevent the contamination of water supply.
- The need to protect water supply resources.
- The location of effluent or waste disposal systems or other potential sources of pollution within 100 metres of a channel will generally be considered inappropriate.
- Compliance with the Septic Tanks Code of Practice

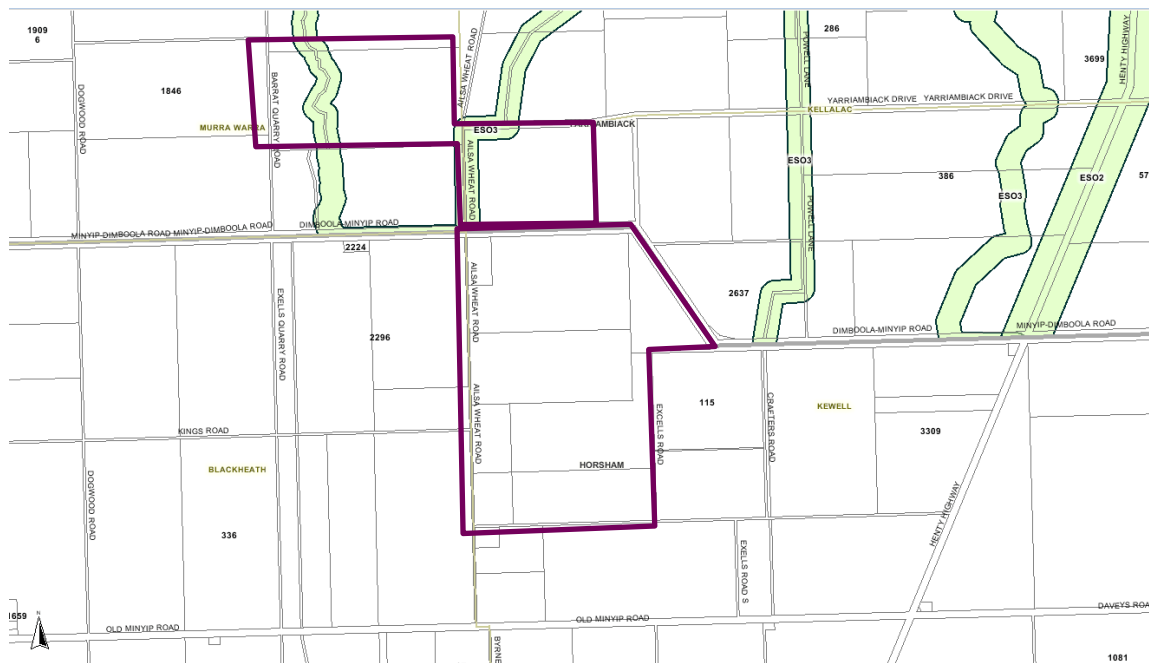


Figure 10 Environmental Significance Overlay

Response:

In a letter dated 30 June 2016, GWM Water advised that, in relation to the “former channel land” they have “no objection to any planning and development of infrastructure for the Murra Warra Wind Farm” within parcels of land under GWM Water ownership or within the land designated ESO3. A copy of the letter is contained within **Volume 2 Section 12**. The channels in this location are operationally redundant and the GWM response is equally applicable to the Development area. Although the requirements of the ESO3 are a material consideration in the assessment of the planning applications, the Development represents an entirely appropriate development compatible with the outcomes sought by the decision guidelines.

5.7 Particular Provisions

5.7.1 Clause 52.05 – Advertising Signs

The purpose of Clause 52.05 – Advertising Signs is to regulate the display of signs and associated structures, provide for signs that are compatible with the amenity and visual appearance of an area and ensure that signs do not contribute to excessive visual clutter or visual disorder. In accordance with Clause 35.07-7 (Advertising signs), signage in the Farming Zone must apply the signage requirements of Clause 52.05-10 – Category 4 – Sensitive areas, which places maximum limitations on signage and seeks to provide for unobtrusive signs in areas requiring strong amenity control.

Pursuant to Clause 52.05-10 – Sensitive Areas, Table 11 identifies relevant permit triggers:

Table 12 Permit Requirements of Clause 52.05-10

Permit Trigger	Permit Requirements
Application A, B and C	
Business Identification Signage	A permit is required Business Identification Signage and the total advertisement area to each premises must not exceed 3 square metres.

Response:

Business identification signage will be required to clearly identify certain elements on site, such as a maintenance facility or the entrance. At this stage, details of the signage required is not yet confirmed. It can however be confirmed that the signage will be limited to the extent necessary for identification, which will not exceed 3m². Therefore, the signage will be minor in nature and will not appear obtrusive in the natural landscape. The signage will be designed with consideration given to the decision guidelines of Clause 52.05-3 and to the satisfaction of the responsible authority. This will ensure the signage has no undue impact on the amenity of the area in accordance with the objectives of Clause 52.05. It is anticipated that full details of all business identification signage will form a requirement of a planning permit condition.

5.7.2 Clause 52.06 – Car Parking

Pursuant to Clause 52.06 – Car Parking, the key purpose of the clause is to ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, ensure that car parking does not adversely affect the amenity of the locality and ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use. The land use term Renewable Energy Facility is not listed in Table 1 of the Clause. Where a use of land is not specified in Table 1, car parking must be provided to the satisfaction of the responsible authority.

Response:

Once complete, the proposed Development will provide a utility area which will include sufficient car parking for the facility.

5.7.3 Clause 52.08 – Earth and Energy Resources Industry and Clause 52.09 – Stone Extraction and Extractive Industry Interest Areas

Clause 52.08 seeks to encourage land to be used and developed for exploration and extraction of earth and energy resources in accordance with acceptable environmental standards and to ensure that planning controls for the use and development of land for the exploration and extraction of earth and energy resources are consistent with other legislation governing these land uses.

Pursuant to the Clause 52.08-1 – Permit Requirement, Table 13 identifies relevant permit triggers:

Table 13 Permit Triggers of Clause 52.08-1

Land Use	Permit Requirements
Yarriambiack	
Application B	
Earth and energy resources industry	A permit is required to use and develop land for earth and energy resources industry.

Clause 52.09 seeks to ensure that use and development of land for stone extraction does not adversely affect the environment or amenity of the area during or after extraction, to ensure that excavated areas can be appropriately rehabilitated, and to ensure that sand and stone resources, which may be required by the community for future use, are protected from inappropriate development. Pursuant to the requirements of Clause 52.09, an application to develop land for stone extraction must be referred to the Secretary to the Department administering the Heritage Act 1995 and the Secretary to the Department administering the Mineral Resources (Sustainable Development) Act 1990.

Clause 52.09-3 outlines the requirements of an application to use and develop land for stone extraction:

- A copy of a work plan or a variation to an approved work plan that has received statutory endorsement under section 77TD of the Mineral Resources (Sustainable Development) Act 1990.
- The written notice of statutory endorsement under section 77TD(1) of the Mineral Resources (Sustainable Development) Act 1990.
- Any conditions specified under section 77TD(3) of the Mineral Resources (Sustainable Development) Act 1990.

These requirements do not apply to an application to use and develop land for stone extraction which is exempt from:

- The requirement to obtain a work plan under Section 77G of the Mineral Resources (Sustainable Development) Act 1990, or
- The provisions of the Mineral Resources (Sustainable Development) Act 1990 under Section 5AA of that Act.

Response:

Clause 52.09-3 – Application requirements identifies a number of items that must accompany an application for stone extraction, which seek to ensure that the use and development of land for stone extraction does not adversely affect the environment or amenity of the area during or after extraction and ensure that areas can be appropriately rehabilitated.

The proposed use of the quarry has an Endorsed Work Plan under section 77TD of the *Mineral Resources (Sustainable Development) Act 1990*. This approval is designed to help ensure that the proposed stone extraction operates in accordance with acceptable environmental standards. For a full copy of the following documents, please refer to **Vol 2 Section 10** of this report:

- A Work Plan that has received endorsement under Section 77TD of the *Mineral Resources (Sustainable Development) Act 1990*.
- The written notice of statutory endorsement under section 77TD(1) of the *Mineral Resources (Sustainable Development) Act 1990*.
- Specified conditions in accordance with section 77TD(3) of the *Mineral Resources (Sustainable Development) Act 1990*.

5.7.4 Clause 52.17 – Native Vegetation

The purpose of this Clause is to ensure permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity. It also seeks to manage native vegetation to minimise land and water degradation and to manage native vegetation near buildings to reduce the threat to life and property from bush fire.

Where native vegetation is permitted to be removed, the clause seeks to ensure that an offset is provided in a manner that makes a contribution to Victoria's biodiversity that is equivalent to the contribution made by the native vegetation to be removed.

Pursuant to Clause 52.17-2, Table 14 identifies relevant permit triggers:

Table 14 Permit Triggers of Clause 52.17-2

Permit Requirements
Application A, B and C
A planning permit is required to remove, destroy or lop native vegetation, including dead native vegetation. This does not apply if the table to Clause 52.17-7 specifically states that a permit is not required, including for fence construction, fire protection, mowing and slashing of grass, maintenance, to enable new buildings and works in the FZ and maintenance of utility installations.

Response:

Solar arrays are composed of panels that are connected to form strings, which are then grouped into arrays and connected to an inverter/transformer. Shadowing has a greater effect than simply reducing the output of any single shaded panel and will actually reduce the output of the entire string to which it forms a part, meaning that the output of the lowest generating panel determines the output of the whole string. As such, scattered trees within paddocks are required to be removed as they impede the efficient layout of the site and overshadow surrounding panels. Two additional trees have also been identified along the Transmission route. It is noted however that final geotechnical surveys will determine the precise route of the line and RES Australia will endeavour if possible to avoid removal of these trees and trim where practical. A detailed Flora and Fauna Assessment has been prepared by Biosis for the Development – refer to Section 6.1 for full details.

5.7.5 Clause 52.42 – Renewable Energy Facility (other than Wind Energy Facility and Geothermal Energy Extraction)

The key 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 and applies to land used and developed or proposed to be used and developed for a renewable energy facility. In order to achieve this, Clause 52.42-2 – Application Requirements provides an overview of all information that must accompany applications (as appropriate) for a renewable energy facility.

Response:

The application requirements set out in Clause 52.42-2 are addressed in Table 15 below.

Table 15 Application Requirements of Clause 52.42-2

Policy Requirement	Section of Report
A site and context analysis, including: <ul style="list-style-type: none"> • A site plan, photographs or other techniques to accurately describe the site and the surrounding area. • A location plan showing the full site area, local electricity grid, access roads to the site and direction and distance to nearby accommodation, hospital or education centre. 	Refer to: <ul style="list-style-type: none"> • Section 2 of this report. • Volume 3 Figures 3 a, b, c of this report for site context and analysis and a full set of plans.

Policy Requirement	Section of Report
<p>A design response, including:</p> <ul style="list-style-type: none"> Detailed plans of the proposed development including, the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas. 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. 	<p>Refer to:</p> <ul style="list-style-type: none"> Full set of detailed plans (Volume 3) Proposed site layout details and examples of proposed works (Volume 1, Section 3.0 Proposed Development) LVIA assessment (Volume 2 Section 9) Flora and Fauna Assessment (Volume 2 Section 2)
<p>A written report(s), including:</p> <ul style="list-style-type: none"> 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 Licence is required from the Environment Protection Authority. 	<p>Refer to:</p> <ul style="list-style-type: none"> The description of the proposal and how it responds to site analysis (Volume 1, Section 3.0 Proposed Development) Discussion of the Works Approval or Licences from the Environment Protection Authority (Volume 1, Section 5.2.7 Environmental Protection Act 1970)
<p>An assessment of:</p> <ul style="list-style-type: none"> 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 <i>Flora and Fauna Guarantee Act 1988</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i>. 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. 	<p>Refer to:</p> <ul style="list-style-type: none"> Development Plans (Volume 3) Certificate of Titles (Volume 2 Section 1) Flora and Fauna Report (Volume 2 Section 2) Economic Impact Assessment (Volume 2 Section 6) Heritage Assessment (Volume 2 Section 3) Environmental Noise Assessment (Volume 2 Section 8) Landscape and Visual Impact Assessment (Volume 2 Section 9) Geology and Hydrology Assessment (Volume 2 Section 4) Environmental Management Plan (Volume 2 Section 11) Glint and Glare Assessment (Volume 2 Section 7) Transport Assessment (Volume 2 Section 5)

5.8 General Provisions

5.8.1 Clause 61.01 – Administration and enforcement of this scheme

The responsible authority for the administration and enforcement of this scheme or a provision of this scheme is specified in this clause and the schedule to the Clause. Horsham Rural City Council and Yarriambiack Shire Council are identified as the responsible authorities for administering and enforcing their respective schemes.

5.8.2 Clause 62 – Uses, Buildings, Works, Subdivisions and Demolition Not Requiring a Permit

Clause 62.01 – Uses not requiring a permit and Clause 62.02-1 – Buildings and Works not requiring a permit state that any requirement in a planning scheme relating to the use of land, or the construction of a building or the construction or carrying out of works other than a requirement in the Public Conservation and Resource Zone, does not apply to (inter alia):

- The use of land for a Road except within the Urban Floodway Zone and a Public Conservation and Resource Zone
- Buildings and works associated with a minor utility installation
- A temporary shed or temporary structure for construction purposes.
- A fence or roadworks, unless specified in the planning scheme.

5.8.3 Clause 64.01 – Land Used for More than One Use

This Clause states that a permit is not required for a use that is deemed to be ancillary to another use.

5.8.4 Clause 65 – Decision Guidelines

This Clause sets out a number of matters to be considered, as appropriate, in order to determine whether the proposal would produce an acceptable planning outcome.

5.8.5 Clause 66 – Referral and Notice

This Clause outlines referral and notice requirements. The following referrals are required under both Yarriambiack and Horsham Planning Schemes:

- The Secretary of Environment and Primary Industries to remove native vegetation (Clause 66.02-2).
- The relevant electricity transmission authority is a Determining Referral Authority to construct a building and carry out works within 60m of a major electricity transmission line (220kV or an electricity easement (Clause 66.02-4)
- The relevant catchment authority is a Recommending Referral Authority for land affected by Schedule 3 to Clause 42.01 (ESO) (Yarriambiack only)
- Clause 80 - Incorporated Documents The following Incorporated Documents are contained in both the Yarriambiack and Horsham Planning Schemes:
 - Permitted clearing of native vegetation – Biodiversity assessment guidelines (Department of Environment and Primary Industries, September 2013)
 - Wimmera Mallee Pipeline Development Yarriambiack Planning Scheme Incorporated Document (introduced by Amendment C14
 - Wimmera Mallee Pipeline Project Horsham Planning Scheme Incorporated Document (introduced by Amendment 35)

5.9 Land Use Terms

Although the proposed battery storage and connections to the grid are not located on the same site as the solar panel infrastructure (or within the same municipality for that matter), the Development of the solar farm, battery storage and associated infrastructure is considered to be consistent with the definition of 'Renewable Energy Facility' pursuant to Clause 74 (land use terms) of the Horsham and Yarriambiack Planning Schemes. The definition is:

Land used to generate energy using resources that can be rapidly replaced by an ongoing natural process. Renewable energy resources include the sun, wind, the ocean, water, flows, organic matter and the earth's heat.

It includes any building or other structure or thing used in or in connection with the generation of energy by a renewable resource. It does not include a renewable energy facility principally used to supply energy for an existing use of the land.

The proposed quarry falls within 'Stone extraction' which is defined as land used for the extraction or removal of stone in accordance with the Mineral Resources (Sustainable Development) Act 1990.

The proposed terminal station for the Murra Warra Wind Farm will be utilised by the Development to transmit or distribute electricity generated by wind, and is a separate land use to that of the rest of the solar farm. The transmission or distribution system is defined as a 'Utility Installation' pursuant to Clause 74 (land use terms) of the Horsham and Yarriambiack Planning Schemes. This facility does not form part of the solar farm and is therefore not included in this assessment.

The proposed use of land for 'Stone Extraction' is considered to be consistent with its definition in Clause 74 which is:

Land used for the extraction or removal of stone in accordance with the Mineral Resources (Sustainable Development) Act 1990.

Stone extraction falls within the umbrella definition of 'Earth and energy resources industry' which is defined as:

Land used for the exploration, removal or processing of natural earth or energy resources. It includes any activity incidental to this purpose including the construction and use of temporary accommodation.

6.0 Summary of Specialist Technical Assessments

This section contains a summary of the specialist technical assessments that have been prepared in support of the planning permit applications for the Development and the requirements set out under Clause 52.42 – Renewable Energy Facility (other than Wind Energy Facility and Geothermal Energy Extraction and Clause 52.09 – Stone Extraction and Extractive Industry Interest Areas.

6.1 Flora and Fauna

Biosis Pty Ltd was commissioned by RES Australia to undertake a flora and fauna assessment of the study area for the proposed Murra Warra Solar Farm. An assessment of the Development in relation to key biodiversity legislation and policy is provided and summarised in Section 6.1.

The study identified patches of Plains Savannah and Plains Woodland which provide potential habitat for Australian Piert, Wimmera Rice-flower, Downy Swainson-pea and Hooded Robin (all significant species). An overview of the assessment is provided in Table 16 below. In accordance with the recommendations of the report, the results of the assessment have been incorporated into the detailed development design by incorporating flora and fauna mapping information. As such, the proposed layout of the facility avoids impacts on most of the key ecological values and patches of remnant native vegetation and the scattered Buloke have been avoided. These areas of native vegetation will be treated as no-go zones and will not be encroached upon during or after construction.

Table 16 Biodiversity legislation and policy assessment

Legislation / Policy	Relevant ecological feature	Permit / approval required	Notes
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Potential habitat for EPBC Act listed flora species (Wimmera Rice-flower and Australian Piert) within study area	The Development is unlikely to result in a significant impact to any matters of national environmental significance.	The potential habitat for threatened species will not be affected by the proposed Development.
Flora and Fauna Guarantee Act 1988 (FFG Act)	Three protected flora species within investigation area.	Protected Flora Permit not required.	Site is private land.
Environment Effects Act (EE Act)	Remnant native vegetation.	No referral criteria triggered.	Only referral criteria relating to flora and fauna have been assessed.
Planning and Environment Act (PE Act)	Remnant vegetation (15 scattered trees) and fauna habitat.	Planning permit will be required to remove native vegetation.	Loss and offset requirements have been determined.

The primary measure to reduce impacts to biodiversity values within the study area is to minimise removal of native vegetation and habitat. The proposed design avoids the removal of native vegetation where possible and it is recommended that a general offset must be secured for the fifteen scattered trees proposed for removal. There is an opportunity to provide this offset within the investigation area in conjunction with offsets for the Murra Warra Wind Farm. See **Volume 2 Section 2** for the full Flora and Fauna Report

6.2 Heritage

The DCHA prepared by *Archaeology At Tardis Pty Ltd* for the Development concludes the following:

- **Aboriginal cultural heritage:** a mandatory CHMP was found not to be required pursuant to the *Aboriginal Heritage Regulations 2007*. No part of the activity area is an area of cultural heritage sensitivity although the activity is a high impact activity (r.6 *Aboriginal Heritage Regulations 2007*).
- **Historic cultural heritage:** the desktop assessment was prepared in compliance with the *Heritage Act 1995* and the *Planning and Environment Act 1987*. The desktop assessment reviewed the historical background, archaeological background (including previous archaeological and heritage studies) and cultural heritage registers. The report concluded that no mandatory Historic Cultural Heritage Assessment would be required pursuant to the *Victorian Heritage Act 1995*.

The above findings by *Archaeology At Tardis Pty Ltd* satisfy planning requirements associated with cultural and heritage management. The full DCHA is available at **Volume 2 Section 3**.

6.3 Geology / Hydrology

A Geology and Hydrology Assessment Report has been prepared by RES provides the following summary of the geological and hydrological conditions. The Development is situated in the Murray Basin geological area and consists of many layers of “recent” marine and freshwater / estuarine sediments of approximate total depth 140m overlying the cratonic base rock formations of the East Australian great dividing range which dating from the Cambrian to Ordovician period. The topography of the site is basically featureless being extremely flat with a general fall of 1m in 1000m towards the Murray River into which the general basin area drains to the north. No significant earthworks will be necessary for the construction of the Development. It is anticipated that a Quarry, developed as part of the wider Murra Warra Wind Farm development, will be able to supply adequate materials for the Development in order to minimise the amount of truck movements associated with track construction. Use of the quarry will be subject to permitting and amendment of an existing Works Approval.

There are no designated waterways or even minor streams within the site area. The obsolete open channel rural water supply system is being filled on an ad hoc basis and these channels are not required for local storm water control. The site is about 7km west of the Yarriambiack Creek but is not in an area prone to flooding and was not inundated during the Wimmera River flood event of 2010 – 2011 when the Yarriambiack Creek flowed for the first time in 15 years. Given the flat nature of the site it is not anticipated that any construction works will cause scour or adverse sedimentation impacts in the area.

The open channel rural water supply system was replaced with a piped system in the Wimmera region between 2006 and 2010, and this water is expected to be drawn upon for construction purposes. Alternatively, groundwater bores may be able to be used for road building purposes and dust suppression only. The salinity of the groundwater is high there is no noteworthy beneficial use of it for agricultural or residential / commercial purposes in the area. The groundwater table is approximately 30m deep at the centre of the Development site and no excavations or quarrying activities during construction will intercept it. Standard construction environmental controls will be able to mitigate minor adverse impacts the works may cause to both surface and groundwater resource. The full Geology and Hydrology Assessment Report is available at **Volume 2 Section 4**.

6.4 Vehicle Access and Traffic Impact

A TIA was prepared by AECOM which seeks to plan for and mitigate traffic and transport issues during the construction, operation and decommission of the Development. The construction phase was identified most likely to have the largest negative impact in comparison to operation and decommission and the TIA considers three transport options including road from Geelong or Portland, and rail (refer also to section 4.0 for construction details).

The Development is to be co-located with the approved Murra Warra Wind Farm. The TIA considers the 'worst case scenario' of the Wind and Solar Farm facilities being constructed concurrently. Key findings of the TIA conclude:

- The average number of vehicle trips per day due to construction of the Development is estimated to be 115. If combined with traffic associated with construction of the Murra Warra Wind Farm, then the number of trips per day is estimated to be 474 trips per day. This volume of traffic is a significant increase on existing local road traffic on Dimboola Minyip Road, however is within the capacity of its local classification (a sealed rural road).
- It is recommended that the sealed section of Dimboola-Minyip Road be widened to from a single carriage way with gravel shoulders to a fully sealed width along a short section of approximately 1km west of the Henty Highway before heavy vehicle use.
- It is unlikely that vehicular movements between Western Highway and Dimboola-Minyip Road, such as Henty Highway and Stawell-Warracknabeal Road will increase traffic volume above the capacity of these roads.
- Externally sourced materials will access the site via Dimboola-Minyip Road from either the Henty Highway or Stawell-Warracknabeal Road. Once on the site, materials will be transported using newly constructed internal roads or the existing Ailsa What Road.
- The TIA recommends a Traffic Management Plan will be prepared in consultation with VicRoads and Council as a condition of permit in order to approve the proposed transport routes to and from the site.
- If the Development was to be constructed in conjunction with the proposed Murra Warra Wind Farm, then significantly more vehicle trips can be expected in total. Estimated vehicle trips if both developments were to be constructed at the same time is 474 trips per day.

The report recommends that before construction activities commence, a Traffic Management Plan (TMP) should be required to assess, plan for and mitigate any unnecessary impacts associated with the movement of people and goods to, from and around the site. In addition, the report proposes the following mitigation and operational measures, many of which may not be necessary if the construction of the facility occurs after the construction of the adjacent wind farm:

- Ensure Dimboola-Minyip Road remains a high quality road by widening between Henty Highway and Ailsa Wheat Road to 6.6 metres.
- Upgrade Ailsa Wheat Road to width of 6.0 metres may be required to allow for passing movements and restoration works may be required post construction to return the road to pre-construction condition.
- An operational condition is recommended to prohibit oversized vehicle movements during school bus hours on school bus routes.

The full TIA is provided at **Volume 2 Section 5** of this report.

6.5 Economic Impacts

An Economic Impact Assessment was prepared by *Essential Economics Pty Ltd*. The report notes a number of key economic reasons supporting the site selection including:

- The Development only represents a small percentage of productive agricultural land within the study area. The income from operator payments will be greater than the average farm income from the land.
- The construction and operation of the facility will create a large number of jobs and provide a large economic stimulus into the region.
- There is a good match of skills and resources available in the region creating significant opportunities for businesses and the local labour force.

The report has calculated the greenhouse benefits of the Development at 0.4 million tonnes per year in CO₂ emissions. This is enough capacity to supply clean energy to approximately 83,000 homes. The full Economic Impact Assessment is provided at **Volume 2 Section 6**.

6.6 Fire and Bushfire Risks

Since electrical equipment and flammable materials are key components of solar farm infrastructure, there is a risk of fire associated with their operation. The region is considered to be a high risk bushfire prone area; however there are not bushfire management overlays on or within the vicinity of the site. Therefore the fire risk is considered to be low.

Appropriate fire prevention measures will be required as part of the construction environmental management plan, as the construction phase is the period when activities associated with the Development may be more likely to increase the risk of bushfire ignition. It is expected that a Bushfire Management Plan would be prepared as a condition of planning permit. RES will liaise with local fire authorities to ensure an appropriate fire management plan is in place to respond to a potential fire prior to the development of a site.

6.7 Glare and Glint

AECOM undertook analysis of glare and glint associated with the Development. Glare is usually described as direct sunlight or reflected sunlight from a surface for a continuous period. Glint on the other hand is usually defined as a brief flash of light that can cause discomfort to the viewer. The purpose of the study is to identify potential glare impacts at nominated observation points based on both fixed tilt and single axis tracking systems and recommend improvements or mitigation options available to RES Australia. (**Volume 2 Section 7**)

The glare model developed for this study considered a 'worst case' scenario, whereby it is assumed that the solar arrays are installed across the entire development site and the entire area of the solar panel arrays are considered a potential glare source. In addition, the model includes conservative assumptions including a high irradiance and the model does not consider any existing vegetation, buildings or topographical features that may exist between the solar panel arrays and the observation points.

6.7.1 Fixed Tilt Conclusions

For the fixed tilt system, Observation Point 1 was found to exhibit the highest glare hazard. The glare hazard reduced for Observation Points 2, 3 and 5 respectively and the study shows no glare impacts at Observation Point 4.

6.7.2 Single Axis Tracking Conclusion

For the single axis tracking system there was no predicted glare at any of the 5 Observation Points.

6.7.3 Impacts to Airports

Given the Development is approximately 15km from the nearest air strip at Warracknabeal Airport and 30km to the nearest public airport at Horsham, it is unlikely that the Development will create any glint or glare issues for pilots on approach to or on departure from the nearest airstrips. Similarly, given the Development will be positioned beyond the visual circuit of the aerodrome (typically up to 5 km) there should be no impact on air traffic controllers. This aligns with the CASA advice which recommends that any proposed solar farms that are below the direct approach paths to an airport (aligned with a runway) and within a distance of around 5 nautical miles (approximately 10kms) from a runway end should be referred for assessment. Accordingly there was no necessity to undertake specific assessment of aircraft flight paths for the Development.

6.8 Environmental Noise Assessment

An Environmental Noise Assessment was completed by Sonus. The Development has been assessed at nearby residences with reference to the State Planning Policy Framework and the Victorian Planning Provisions. A conservative assessment was undertaken developed from the *Noise from Industry in Regional Victoria* (NIRV). The proposed layout and inverter/transformer selection is

predicted to easily achieve the NIRV at all residences within the vicinity with no specific acoustic treatment or mitigation measures. A cumulative assessment of the noise impacts noted that the operation of the facility would not prejudice the ability of the adjacent Wind Farm and substation to achieve their respective requirements. Once the final inverter/transformer unit selections have been made, a final noise assessment will be conducted to confirm compliance with the development criteria. The full Environmental Noise Assessment is provided at **Volume 2 Section 8**.

6.9 Landscape and Visual Amenity

The LVIA illustrates that the Development is situated in a landscape that has a low sensitivity to change. It is a broad-acre rural landscape that has been cleared to create huge areas for farming. The LIVA refers to this landscape character type as 'Big Plains' and this is illustrative of its character. The LVIA concludes that the flat topography and extensive clearing has created a landscape that can accommodate the Development see **Volume 2 Section 9**.

Key findings from the LVIA include:

- Overall visual impacts on the Henty Highway will be *null*. Neither the solar array, nor the solar overhead collector system corridor will be a visible element in the landscape.
- Overall visual impact on local roads will be *negligible*. The low vertical scale of the Development, existing landscape features such as vegetation and the limited use of local roads running through and around the proposed Development contribute to this conclusion.
- The closest residence to the solar facility is approximately 500 metres from the nearest solar panel. The visual impact of the facility from this distance would be negligible, if visible at all and is a part of the property that is involved in the project.
- The closest non-involved residential property is located approximately 800 metres from the nearest solar panel. At this distance, the visual impact would be *negligible*.

6.10 Environmental Management Plan

The Environmental Management Plan (EMP) details how the site will be managed through construction, and sets out future operational and maintenance requirements to mitigate potential impacts on the environment and local amenity. See **Volume 2 Section 11** for further information.

6.11 Endorsed Work Plan

A Work Plan was prepared and approved in association with the development of the approved Murra Warra Wind Farm (PA160027, PA160028 and PA160029). In this instance, the Work Plan was Endorsed by DELWP and approved as an ancillary use to the Wind Farm facility.

Following investigations for the Solar Farm, it has been confirmed that the required materials for the Solar Farm will not require an enlargement of the Quarry and that the Endorsed Work Plan is sufficient. As such, the Endorsed Work Plan is provided in **Volume 2 Section 10** (for use of the quarry for the Murra Warra Wind Farm) will be amended to extend the use of the quarry to include the solar farm. DELWP have confirmed that the following process for use of the quarry:

- Confirm via planning permit application that extractive materials will be utilised for construction of both the Murra Warra Wind Farm and Solar Farm;
- Following issue of a planning permit for the solar farm, return the Endorsed Work Plan and planning permit to DELWP seeking amendment;

DELWP will then make a determination on any required work plan specific conditions that would be placed on the revised work plan.

If approved, the above process and amendment of the existing Work Plan may be undertaken in accordance with a suitably worded permit condition.

7.0 Conclusion

AECOM Australia Pty Ltd has prepared this planning report on behalf of RES Pty Ltd (the Applicant) to provide supporting information for three planning permit applications, which relate to the proposed Development of a photovoltaic solar farm and associated buildings and structures.

The Development will be sited within two municipalities, Horsham Rural City Council (HRCC) and Yarriambiack Shire Council (YSC).

The purpose of the Development is to supply electricity generated from solar radiation into the National Energy Market via the Victorian 220kV network. The facility is expected to have an installed capacity of up to 235MW AC which will be provided by approximately 900,000 solar photovoltaic (PV) modules, and associated infrastructure. The Development will also include an up to 300MWh capacity energy storage facility in a secure compound.

Power generated by the solar farm will be connected to the proposed Terminal Station for the Murra Warra Wind Farm (now approved through a separate planning process) and exported to the grid via the Murra Warra Wind Farm transformer.

This report demonstrates that the proposed Development is highly consistent with the State Planning Policy Framework and accords with planning policy objectives and strategies set out in both the Yarriambiack Shire and Horsham Rural City Council Planning Schemes as follows:

- The proposed Development does not trigger any Commonwealth level approvals and is highly consistent with commonwealth legislation objectives.
- Specialist Reports contained in the Appendices of this report appropriately considers Victorian Legislation and confirms that the proposed Development does not trigger any other legislative approval processes that should be considered in conjunction with the planning permit application process.
- The Development anticipates the future needs of the community by providing a renewable source of energy to the region and is expected to have negligible impacts on existing agricultural industries and natural resources in the area. As such, the Development is consistent with State and local objectives that seek to facilitate investment and diversification of the regional economy, whilst protecting agricultural land.
- The Development encourages sustainable land management that will enable existing agricultural industries to operate whilst maximising the potential of the land to provide a source of renewable energy for Victoria.
- The proposed layout is consistent with state and local objectives that seek to protect biodiversity and native vegetation, as it minimises impact on areas of the site that contain key ecological values and patches of remnant vegetation.
- Construction and operation of the Development will mitigate possible environmental risks and comply with key State and local policies and objectives by implementing an Environmental Management Plan that has been prepared to ensure that the Development accords with best practice standards. The proposed use of land for a quarry (which is already approved as an ancillary use in association with the Development of the quarry) will enable materials from the quarry to also be used to construct the Development and will be undertaken in accordance with State and local planning policy and environmental standards.
- The Development is consistent State and local planning objectives regarding the built environment as it will be consistent with the emerging landscape character of the area which contains a mixture of rural agricultural and renewable energy uses.
- The Development is co-located with the approved Murra Warra Wind Farm which will ensure that the two pieces of infrastructure can be efficiently and effectively maintained in accordance with State and local infrastructure policies and objectives.

It is therefore concluded that the Development is highly consistent with State and local planning policy and should be supported by the Yarriambiack Shire and Horsham Rural City Council.

VOLUME 2

Please refer to Volume 2 which contains a range of specialist technical assessments that have been prepared in support of the Development. These are cross-referenced throughout the report. The documents and reports contained within Volume 2 are as follows:

- Certificate of Titles (Section 1)
- Flora and Fauna Report (Section 2)
- Desktop Cultural Heritage Assessment (DCHA) (Section 3)
- Geology and Hydrology Assessment (Section 4)
- Transport Impact Assessment (Section 5)
- Economic Impact Assessment Report (Section 6)
- Glint and Glare Assessment (Section 7)
- Environmental Noise Assessment (Section 8)
- Landscape and Visual Impact Assessment (Section 9)
- Endorsed Work Plan (Section 10)
- Environmental Management Plan (Section 11)
- Referral Responses received to date (Section 12)
- Consultation Material (Section 13)

VOLUME 3

Please refer to Volume 3 which contains the Development Plans prepared by RES Australia to support the proposed development. These plans should be considered in conjunction with the information provided in Volumes 1 and 2 of this report. Volume 3 contains the following plans:

- Figure 1 – Location Plan
- Figure 2 – Solar Irradiation Map
- Figure 3A – Site and Context Analysis – General
- Figure 3B – Site and Context Analysis – Planning Controls
- Figure 3C – Site and Context Plan – Native Vegetation
- Figure 4 – Solar Farm Landowners
- Figure 5A – Infrastructure (Fixed Tilt)
- Figure 5B – Infrastructure (Single Axis Tracker)
- Figure 6 – Design Response
- Figure 7 – Solar Grid Connection and Battery Storage
- Figure 8A – Typical PV Module and Rack Detail – Piled Foundation
- Figure 8B – Single Axis Tracker
- Figure 9 – Typical Power Conversion Unit – PCU
- Figure 10 – Typical Access Track
- Figure 11 Typical Site Operations Buildings / Facilities, Car Park and Collector Yard
- Figure 12 – Energy Storage Solution
- Figure 13 – Energy Storage Buildings Elevations and Perspective
- Figure 14 – Typical 33kV Overhead Line Poles
- Figure 15, Typical Construction Compound
- Figure 16 – Typical Metering Point
- Figure 17 – Typical Security Lighting and CCTV Supporting Details
- Figure 18 – Typical Stock Fence Detail

