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 Approved Company – ISO 9001 – Quality Management Systems

## Planning Report

### 5MW Solar Energy Facility Goroke-Harrow Road, Charam



Visual render of site with landscaping (Image: Urban Initiatives)

August 2021

Ref: 20143

**Applicant: Green Gold Energy**

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5MW Solar Energy Facility  
Goroke-Harrow Road, Charam

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## 1 Introduction

This report has been prepared by Chris Smith and Associates for Green Gold Energy Pty. Ltd. – referred to herein as “Green Gold”. The proposal is for a 16-hectare solar energy facility on a 76-hectare parcel of land at Goroke-Harrow Road, Charam, as well as the ancillary power lines within the adjacent road reserve to the south.

The facility is considerably smaller than the larger facilities that have been approved through regional Victoria. Green Gold’s proposed facility is designed to provide approximately 5MW (megawatts) of electricity to the local distribution network. Landscaping is to be provided along all active interfaces with neighbouring properties and road frontages.

The subject site is located approximately 22.5km north-east of the Edenhope township, has been selected based on its suitable attributes, in accordance with the *Solar Energy Facilities Design and Development Guidelines, August 2019*, as set out in this report, including direct access to 22kV powerlines and the adjacent sub-station.

Key reference documents used to guide the site selection and design process for this proposal are:

- Grampians Region Renewable Energy Roadmap
- Victoria’s Climate Change Strategy
- Solar Energy Facilities Design & Development Guidelines, August 2019
- CFA Guidelines for Renewable Energy Installations, 2021 Revision
- West Wimmera Planning Scheme

The site and proposal assessments, plans and documents produced to inform and support this application are:

- **Certificate of Title**, Vol. 08152; Fol. 669
- **Site Plan**, by Green Gold Energy (*both with and without aerial photo underlay*)
- **Electrical Equipment Elevations**, by Green Gold Energy
- **Fence Elevations**, by GPA Engineering
- **Visual Impact Assessment**, by Urban Initiatives
- **Overhead Powerlines Elevations**, by Green Gold Energy
- **Construction Environmental Management Plan**, by Green Gold Energy
- **Plan of Existing Conditions**, by Chris Smith & Assoc.
- **Agricultural Assessment**, by Cadeema
- **Glint and Glare Assessment**, by Environmental Ethos
- **Noise Impact Assessment**, by ADP Consulting
- **Preliminary Biodiversity Assessment**, by Red-Gum Consulting

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## 2 Green Gold Energy Company Profile

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Green Gold is a South Australian-based company that takes a collaborative approach to renewable energy. Green Gold seek to partner with landowners to identify land that balances the farmer's needs and the requirements for electricity generation for all solar energy facilities.

Green Gold's core business is centred around smaller or underused parcels of rural land that can support commercially viable Solar Energy Facilities with the necessary investment and infrastructure.

These solar energy facility projects are designed to export generated energy into the grid, enabling it to be sold on the National Electricity Market using the latest state-of-the-art PV technologies to ensure the most efficient, reliable power generation.

Green Gold projects deliver:

- Long-term, secure supplementary income to landowners
- Access to the Australian renewable energy market to investors and shareholders
- Sustainable returns for investors

These projects also bring significant benefits to the regional communities they are located in by creating jobs, providing local economies with the assets to improve energy infrastructure, and creating stronger, more sustainable communities.

The Green Gold executive team has commissioned more than 50 solar energy facilities in South Australia. Green Gold state: "We are proud of the role we're playing in powering our region's green energy transition".<sup>1</sup>

## 3 Site Selection & Pre-Application Process

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The decision by Green Gold Energy to expand into providing solar energy facilities in Victoria was based on a sound business model, including consideration of the region's solar access, its trunk electricity network infrastructure and the region's desire for clean, efficient and affordable electricity. The region contains areas with expanses of flat and open topography with very little or no environmental constraints such as rock, steep terrain or native vegetation.

The subject site was secured by Green Gold Energy because it held the above-mentioned attributes conducive for solar facilities and is directly adjacent to 22kV powerlines and has a willing owner – who welcomed the opportunity to receive an alternative income form the land as its agricultural viability is marginal.

Once it was determined that the site had the required physical and electricity network attributes – a flat open site, adjacent powerlines that have the capacity to accept electricity generated by the facility that can feed into the nearby Wombelano substation for use by the local community.

Chris Smith & Associates were engaged to carry out a rigorous pre-application investigation. This included the following two phase investigation and assessment process:

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<sup>1</sup> <https://greengoldenergy.com.au/about/>

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Phase 1 – Initial investigation:

- Desktop planning investigation to determine planning controls applying
- Discussion with Cadeema – a regional agricultural consultancy with extensive knowledge of farming and land use considerations and constraints.
- Informal pre-application discussions with DELWP renewables team.

Phase 2 – Concept design & specialist assessments:

- Engage Chris Smith & Associates surveyors to carry out a Site Survey and Feature Plan of the subject land.
- Engage specialist consultants to undertake environmental and visual impact assessments of the site and provide independent professional opinion of the likely impacts of the proposal on the surrounding area.
- Detailed planning assessment.
- Refine solar facility layout and design, based on the recommendations of these investigations and assessments.

Our site and planning investigations confirmed the subject site's suitability, including being well clear of any areas of cultural heritage sensitivity. Accordingly, it is submitted that a detailed and balanced approach to all relevant site and planning considerations has been undertaken to provide a sound planning proposal, as set out in this report and supporting documents.

## **4 Site and Context Description**

The proposed solar energy facility is to be built on land at Goroce-Harrow Road, Charam, located wholly on a single parcel – Crown Allotment 33, Parish of Konnepra.

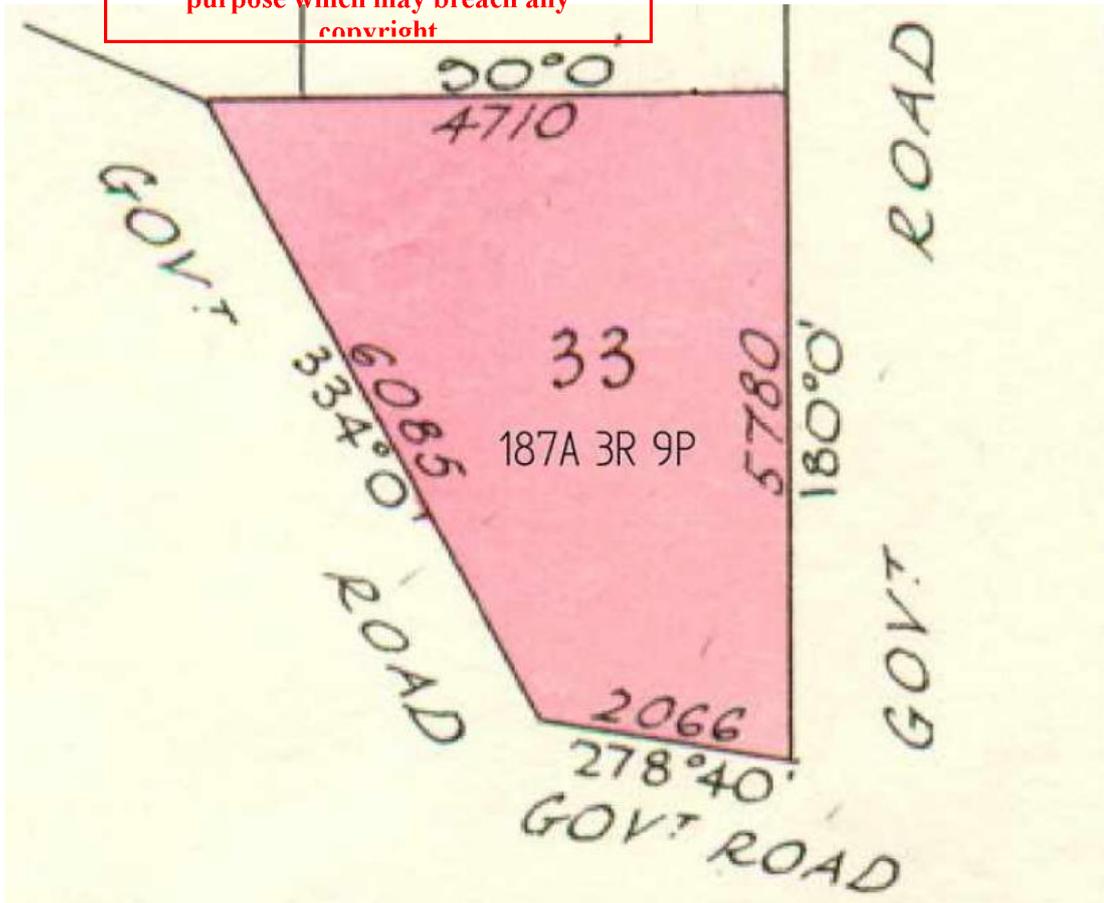
Green Gold Energy has agreed to lease the southern portion of the subject site from the landholder to develop it for a solar energy facility – for a period of approximately thirty (30) years.

A Certificate of Title for the subject land is appended with this report – Certificate of Title, Vol. 8152, Fol. 669. The land parcel's configuration is illustrated in the below figure.

The subject land is an irregularly shaped allotment with an area of approximately 76 hectares. The site has two (2) frontages to adjoining Council roads, with a frontage of approximately 415 metres to Charam-Wombelano Road along the southern boundary and 1,224 metres to Goroce-Harrow Road along the western frontage. Both of these roads are sealed all-weather rural roads that are capable of supporting heavy vehicle traffic typical of regional/agricultural areas.

The subject property contains two distinct natural ground levels, with the northern part of the property being flat, although at a higher elevation, before dropping to the southern, lower part of the property. The development site itself is relatively flat, with gentle undulation reflective of natural ground levels – representative of the property containing largely unimproved pasture.

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Extract from TP847865

There is a depression along the south-west corner of the site, which provides an outfall to the site into the Konnepra Swamp to the west of the site – beyond Goroke-Harrow Road.

A plan of existing conditions has been prepared by CS&A surveyors to illustrate the existing topography and features on the site – provided as an appendix to this report.

The subject land is largely open, cleared land, with the exception of tree lines along the eastern and southern property boundaries. However, within the property itself, there are several scattered remnant trees, with no evidence of understorey other than introduced grasses and weed species.

The proposed facility will occupy approximately 16ha of the 76ha property. The remaining land outside the facility's compound fence to the north will remain "as is" allowing stock to graze seasonal growth.

#### 4.1 Surrounding Context

The subject land is located approximately 22km north-east of the Edenhope township – by direct measurement to the nearest urban-zoned land.

There are no dwellings within a 2km radius of the proposed facility – as illustrated in the below figure. Further, a visual impact assessment has been prepared by Urban Initiatives and is appended to this application – to provide visual context of the proposal in relation to the surrounding area.

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**Immediate site locality – showing 2km radius from centre of proposed facility**  
Nearest dwellings marked and numbered with yellow pin

The surrounding area is a mix of dryland agriculture, public land, and significant wetlands:

- **North:** The land north of the facility is primarily used for conventional dryland agriculture – with grazing and some cropping evidenced through historical imagery. The O’Keefe Wildlife Sanctuary is approximately 4.5km north of the subject site.
- **East:** Beyond the agricultural land immediately to the east of the site, the prominent topographic feature is the 3,500-hectare Konnepra State Forest – a public reserve that comprises significant native vegetation.
- **South:** Although there are significant tracts of native vegetation and wetlands to the south of the site, the predominant landscape feature is that of dryland agriculture. The proposed Wombelano Wind Farm (currently under consideration) is located directly south-west of the subject land.
- **West:** Akin to the landscape character to the south, the land to the west of a site is a mix of wetlands and biodiversity corridors with the prevailing land use being agriculture. Directly west of the site, the Konnepra Swamp provides a low-lying topographical feature that the subject land naturally drains into.

The site is fronted by existing 22kV overhead powerlines which run along Charam-Wombelano Road and feed into the Wombelano Powercor substation, directly south of the subject land.

## 4.2 Wombelano Wind Farm

A separate planning permit application is currently before the Minister for Planning for the Wombelano Wind Farm. This proposed wind energy facility is located at the south-west corner of the intersection Goroke-Harrow Road and Charam-Wombelano Road – to the south-west of the site, as illustrated in the below figure.

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Approximate location of turbines superimposed from publicly available information

Source: <http://www.windprojectsaustralia.com.au/portfolio>

In considering the character of the surrounding area, and the smaller nature of the proposed solar farm, it is not considered that the co-location of renewable energy facilities would present an undue impact on the landscape of the wider region. Despite both facilities being renewable energy facilities, the inherent visual bulk of the proposed solar energy facility and wind energy facility will be entirely distinct from each other and are unlikely to compound visual clutter in an area that contains limited dwellings and otherwise no existing renewable energy facilities.

### 4.3 Existing Planning Controls

The subject land is within the **Farming Zone** and is affected by **Environmental Significance Overlay 2**.

## 5 Proposal & Planning Permit Triggers

This application seeks planning approval to **use and develop** approximately 16 hectares of land at Groke-Harrow Road, Charam for a **solar energy facility** as shown on the attached plans.

The proposal also includes development of the adjacent road reserve containing Charam-Wombelano Road for a **utility installation** – being the extent of overhead lines that will connect into the existing 22kV overhead lines within the road reserve.

The proposed solar energy facility has been designed in compliance with the provisions of Clause 53.13 of the West Wimmera Planning Scheme.

The proposal includes the **removal of native vegetation**, due to the consequential loss of a single red gum as a result of TPZ encroachment; however, the application does not actively propose to remove this tree, which may likely be retained on the site.

The proposal does not include any advertising signs (Clause 52.05) or any other matter requiring a planning permit.

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## 5.1 Planning Permit Triggers

Pursuant to the West Wimmera Planning Scheme, a planning permit is triggered for the proposal under the provisions:

### Use of Land

- 35.07-1 – To Use land for a Solar Energy Facility (in accordance with the requirements of Clause 53.13) and Utility Installation in the Farming Zone.

### Building and Works

- 35.07-4 – Building and works associated with Section 2 Uses in the Farming Zone.

### Removal of Native Vegetation

- 52.17-1 – To remove, destroy or lop any vegetation, including dead vegetation

## 5.2 Other Statutory Considerations

### 5.2.1 Aboriginal Cultural Heritage Sensitivity

The proposed use and development of land for a Solar Energy Facility and the associated Utility Installations are High-Impact Activities (HIA) under Aboriginal Heritage Regulations.

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Immediate site locality – showing 1km radius from proposed facility and ACHS in blue

The north-west portion of the property is within an area of Aboriginal Cultural Heritage Sensitivity (ACHS) – however, the proposed extent of the HIA is wholly outside of the identified ACHS. The mapped area of ACHS would continue to be used for the existing agricultural use for grazing, which would not lead to any further ground disturbance.

This assessment is given further credence, pursuant to the recent VCAT declaration in **Croke v Moira SC [2018] VCAT 1476 (21 September 2018)**.

This case touches upon the implications of ground disturbance in an ACHS – specifically in the context of an application for a renewable energy facility and auxiliary power connections. This determination also clearly states that the fenced compound forms a clearly defined limit as to what can be considered the area of high impact activity.

Consequently, as no part of the proposed facility or ancillary works are within the mapped ACHS, the preparation of a Cultural Heritage Management Plan is not a statutory requirement and is not considered necessary for this application.

### 5.2.2 Bushfire Prone Areas

The subject land, in addition to the surrounding area is wholly within the **Bushfire Prone Areas** mapping, which applies the provisions of the Building Regulation 2018 to development.

Accordingly, the proposal has been designed in accordance with the CFA's Guidelines for solar energy facilities to ensure that bushfire risk is managed – refer to the relevant section of this report for a detailed assessment.

### 5.3 Facility Equipment

The proposed solar energy facility, utility installation and associated works are to be as shown on the attached plans and supporting documents.

Specifically, it will consist of:

- **12,312 solar panels**, mounted on single axis tracking arrays, each having the following specification:
  - Nominal dimensions of 2.1m by 1m
  - Maximum height of 2.6m above ground (when at maximum rotation)

The panels will be arranged in **145 individual rows**, each will comprise **85 individual panels** mounted on a central axis.

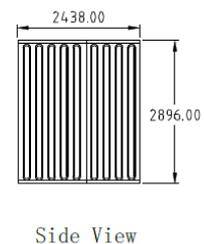
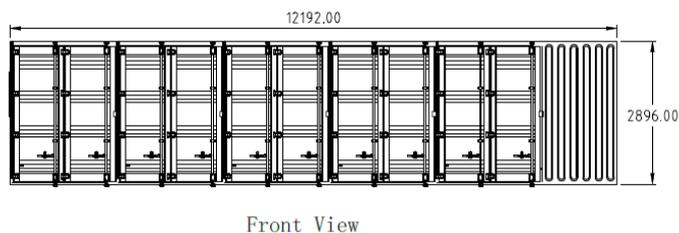
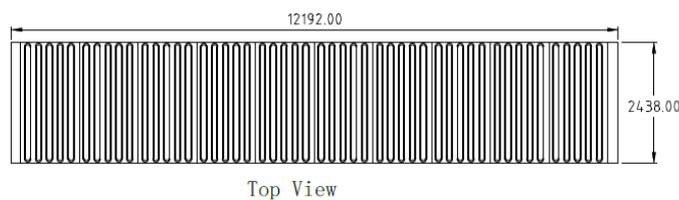
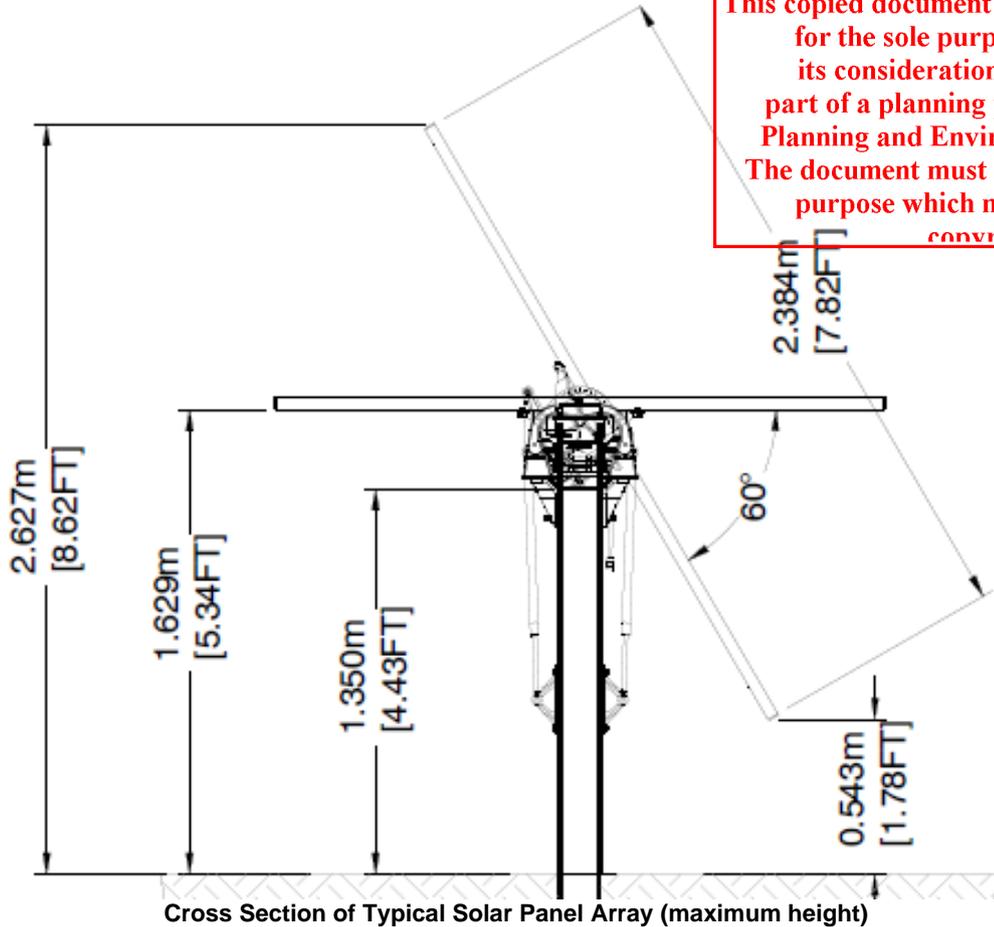
- **2.3m high perimeter fence** consisting of 1.8m high chain wire mesh and three strands of barbed wire on top around entire perimeter of facility, including a single gate – positioned to the front (south) of the facility.
- **Single vehicle crossing (access point)** from the south to Charam-Wombelano Road at the location shown on the Site Plan, to the requirements of the relevant local road authority.
- **Landscaping** along active/visible interfaces, as shown on Landscape Plan, directly outside the compound fence on the southern (front) and western sides of the proposed facility.
- **One (1) medium voltage power station inverter**, positioned central to the facility – between panel arrays – containing two (2) SMA2475 inverters internal to the inverter station

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- Pole and 22kV overhead powerline connection to Powercor electricity distribution network on Charam-Wombelano Road.
- One (1) high voltage power switchboard, positioned centrally at the front of the facility – between panel arrays

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**Elevations of Proposed Inverter Station**

## 6 Victoria's Climate Change Strategy

Victoria's *Climate Change Act 2017*, outlines a comprehensive framework to achieve both emissions reduction and renewable energy targets by 2050

The strategy aims at reducing state's emission *up to 28-35% by 2025 and 45-50% by 2030 (Victoria Climate Change Strategy, 2021)* respectively.

The strategy delineates opportunities to cut out greenhouse gas emissions whilst acknowledging largest source of emission is energy sector. The cutting-edge policies and investments seek to drive emissions reductions not only in Victoria but across the National Electricity Market by reducing the amount of electricity we need to import from interstate and therefore reducing the amount of fossil fuel-based electricity generated by other states (*Victoria Climate Change Strategy., 2021 p.10*).

This strategy outlines a **five (5) point plan** to ensure Victoria's Net Zero Emission Future:

- **A clean Energy Economy**

*"Globally, installed wind and solar capacity will exceed gas by 2023 and coal by 2024"*

*"By 2030, 50% of electricity generated in Victoria will be sourced from renewables"*

- **Innovation for the future**
- **Resilient Farms and Forests**
- **Climate smart businesses and communities**
- **A climate resilient Victoria**

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The proposed development represents a step for Victoria toward a renewable energy future, on land that is currently used for marginal agricultural use and contains limited identifiable biodiversity value.

The development has limited the requirement for removal of native vegetation in order to provide a regional municipality with access to affordable renewable energy.

## 7 Grampians Regional Roadmap to Net Zero Emissions

The Grampians Region has confirmed its desire to support renewable energy by being the first Victorian region to finalise and adopt its Regional Renewable Energy Roadmap.

The transformation to renewable energy provides the economic benefits of local job creation and access to cheap, clean energy; environmental benefits in response to climate change as well as social benefits such as education, energy justice and infrastructure investment remaining in the local community.

This Roadmap sets out a broad framework for what the region is trying to achieve and how it can achieve it in a coordinated and effective manner. It identifies the opportunities for the region and the reasons why it is suitable for renewable energy investment:

*"The Grampians can achieve the Net Zero Emissions goal as early as 2044, if clear and targeted actions within the region are complemented by clear and targeted actions from government and industry beyond it. Local Action alone can achieve*

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76.5% of the target by 2050. A Business-as-Usual approach would achieve only 23.3% of the target by 2050.”

### Recommendations for Collaborative Action

- Local authorities can work with state and federal governments and with infrastructure providers to upgrade the region’s existing power grid.
- Local organisations can engage with governments and energy companies to establish community benefit programs.

In response, the proposed solar energy facility will provide approximately 4.95MW of immediately available renewable energy to regional Victoria, contributing to the state’s transition to renewable energy in line with the targets and recommendations outlined above.

This investment would be funded by the private sector and would allow for the State Government to achieve the targets set, with particular focus around the need for immediate and decisive action.

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## 8 Design Considerations

**Clause 53.13** provides the key planning framework for all new renewable energy facilities, ensuring that the facilities are located in appropriate locations, so they have minimal impact on the amenity of the area.

The **Solar Energy Facilities Design & Development Guidelines, August 2019**, are incorporated into the Scheme. The guidelines outline the key considerations for the use and development of solar facilities across Victoria.

The **CFA Guidelines for Renewable Energy Installations, February 2019 (Revised March 2021)** provide standard requirements with regard to fire safety, risk and emergency management for consideration in the design, construction and operation of renewable energy facilities, including solar facilities.

As such, these documents have informed the process – from the initial site selection through to design, proposed construction methods, operation and maintenance – right through to the ultimate decommissioning of the facility. To this end, consideration of the matters required by these documents is demonstrated throughout this report and the supporting documents. Notwithstanding this:

- the application requirements of Clause 53.13 are addressed in **Section 11.6** of this report;
- an overview/response to the relevant provisions of the DELWP Guidelines is below in **Section 9**; and
- a response to the relevant provisions of the CFA Guidelines is below in **Section 10**;

## 9 DELWP Solar Energy Facilities Design & Development Guidelines

These Guidelines set out best practice advice for developers of solar energy facilities in Victoria, including recommendations for community consultation, design, consideration of off-site impacts, construction, operation and decommissioning. In addition to the details throughout this report, the considerations and application

requirements set out in the Guidelines, have been grouped and responded to under the following themes.

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### 9.1 Identifying suitable locations

Green Gold has extensive past project experience across Australia – having commissioned approximately 50 solar energy facilities in South Australia – typically small-scale solar generation facilities, similar to the current proposal. Most of these facilities have been built and are currently providing clean and cheap renewable energy to the immediately surrounding local community.

Northern and Western Victoria has been identified as having excellent solar irradiance and the Grampians region is ready and willing to see local renewable electricity generation for the use and benefit of its local residents. Accordingly, Green Gold embarked on a process of securing suitable sites in western Victoria.

Factors such as land availability, proximity to the electricity network, accessibility, topography and site constraints are all key considerations when first looking for potential sites.

#### Existing electricity transmission network

The financial viability of a sub-5MW facility is dependent on the facility being within immediate proximity of the distribution network, as beyond this, network augmentation costs become prohibitive. The subject site was initially selected for its direct abuttal to existing 22kV lines and substation.

The siting of the facility close to the existing transmission infrastructure allows efficient transmission of the energy generated into the grid; and for a financially viable connection to be achieved whilst also ensuring the proposal is consistent with recent changes to planning policy which seeks to regulate extensive overhead power line connections.

The facility design – in particular, positioning of the HV Switchboard - has considered existing trees on the land and the adjacent road reserve. A clear line of sight has been achieved for the overhead connection between the switchboard and the nearest Powercor pole on the south side of Charam-Wombelano Road. Accordingly, the proposal will minimise the need for removal of any trees.

#### Managing cumulative effects in area

The Solar Facility Guidelines state that planning is to consider the potential cumulative impacts of solar energy facilities. The proposal is for a sub-5MW facility that will occupy approximately 16ha of land, a relatively small portion of agricultural land; especially in comparison to the larger facilities that the Guidelines are designed to accommodate.

There are no public records of any proposed or existing solar energy facilities with close proximity to the proposal site. The nearest facility is the approved Rifle Butts solar energy facility approximately 50km east of the subject site. Accordingly, the proposed facility would not lead to any undue cumulative visual impact on the surrounding area as a result of solar panels.

Consideration of the proposed “Wombelano Wind Farm” has been addressed within an earlier section of this report.

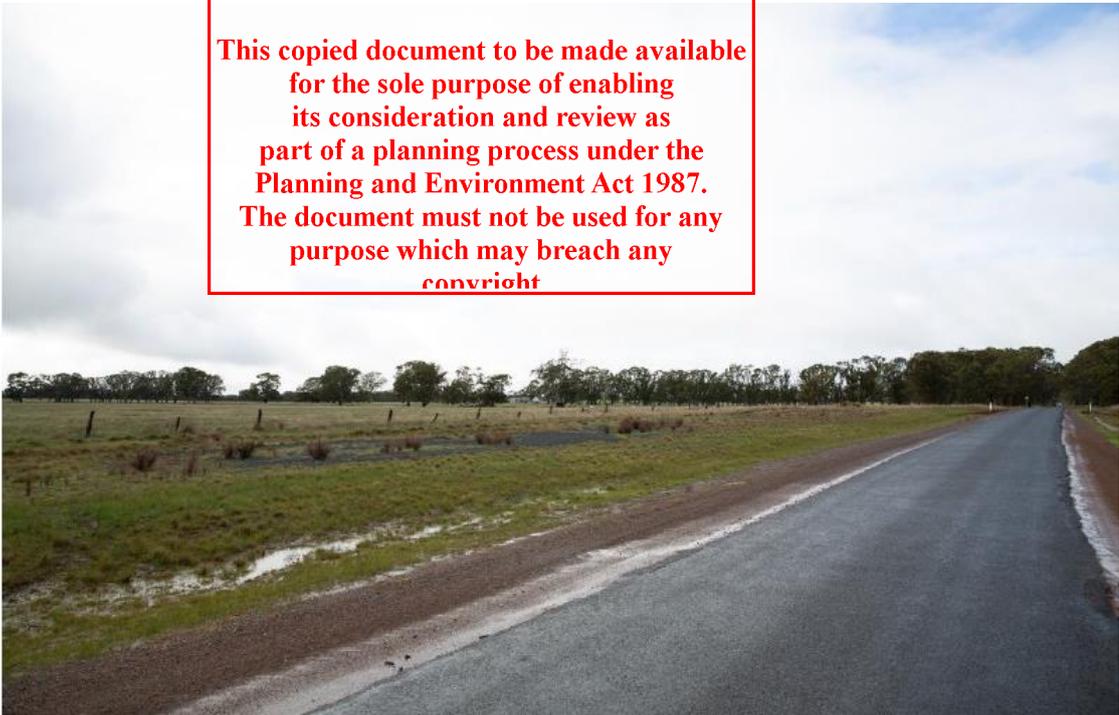
The visual impact of the facility is to be further softened through the use of landscape screening. VCAT precedent has established that solar energy facilities are a typically

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benign land use that causes fewer impacts than many conventional rural land uses that are immediately present within the site's locality.

Accordingly, it is submitted that when viewed in the context of their surrounds the cumulative impact of the approved and proposed solar facilities, in terms of both land use and visual impact, is minimal.

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**View along southern boundary of site – facing east along Charam-Wombelano Road**  
Photo: Urban Initiatives

## **Protecting environmental, site and amenity values**

The site has been deemed suitable because of its lack of biodiversity value. The site is dominated by degraded pasture and opportunistic or invasive weed species with limited grazing value.

The land does not contain any *current* mapped wetland. The site contains areas of scattered remnant trees and one row of planted vegetation; however, the proposal has been designed to largely avoid the existing paddock trees, thus, there will be no impact from the proposal or any associated works.

The proposed development site is not in an area of cultural heritage sensitivity.

The site is not identified as being susceptible to flooding – should it be necessary, suitable conditions may be requested by the CMA.

The southern half of the West Wimmera Shire is within the Environmental Significance Overlay – which specifically seeks to protect the habitat of the red-tailed black cockatoo. To this end, the proposal does not require the removal of any habitat trees that would further endanger the bird.

## **Minimising impact on landscape values**

In considering size and magnitude of the facility, as well as the flat topography of the site and the built form of the development, landscape impacts are considered to be unlikely – a photomontage of the surrounding vistas is provided herewith.

With a total area of less than 16ha, the proposed facility is considered to be of substantially lesser scale than typical “standard-sized” facilities, that can occupy hundreds of hectares of land.

The proposal also includes a centrally located inverter station, and a switchboard within the compound at the electricity network connection point. None of these components are particularly large or visually intrusive and are considered comparable to an agricultural shed. The facility does not include any batteries.

The subject land is within the Farming Zone and many surrounding properties are used for seasonal grazing. The nearest dwelling to the proposal facility is located on the property to the west of the subject site – over 2km from the proposed facility. However, this dwelling is located within the Farming Zone and is therefore not considered a sensitive use for the purpose of planning.

It is submitted that the proposal will have very little (negligible) visual impact on the locality, mostly due to the topography of the land and the height and scale of the proposed facility. Cumulative impact of all proposed solar facilities in the area has been managed through the careful site selection process which obscures views from most public interfaces.

## 9.2 Community Consultation

As a result of the current climate with regard to the COVID-19 pandemic apparent and restrictions were imposed by the State’s Chief Health Officer, Green Gold has been unable to make any to approach neighbours in-person and have therefore not been able to undertake face-to-face consultation with all nearby neighbours as would have been typical practice.

Accordingly, the notice provisions of Section 52 of the P&E Act will ensure all relevant stakeholders will be notified.

## 9.3 Design

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The proposed solar panels are set back from each boundary of the site, as follows:

- South (front): 39m between the nearest panel and Charam-Wombelano Road property boundary;
- East: 40m to property boundary (existing fence);
- West: 33m to property boundary and frontage to Goroke-Harrow Road (existing fence); and
- North: Over 650m at nearest point to the property boundary.

The entire perimeter (inside the compound fence) includes at least ten (10) metres clear open space for emergency access and fire separation – as per the CFA Guidelines.

The inverter station has been positioned close to the panel arrays, and away from neighbouring properties.

Landscaping is to be provided along all sides of the facility – with varying widths – as shown on the Site Plan and Landscape Plan submitted herewith. Landscaping will be a staggered row planting of suitable massing locally indigenous medium shrubs as specified on the Landscape Plan. The landscaping will be positioned directly outside the compound fence so that it can be protected from grazing stock – except along the

southern boundary where it will be planted inside the compound fence – within the property boundary.

It is submitted that the proposed facility should be considered as having “no impact” in terms of glint and glare, given the sitting, height and orientation of the panels in conjunction with the topography of the area, existing landscaping and vegetation. It is submitted that solar reflection at ground level on surrounding properties and roads would be impossible. To demonstrate this, a Glint and Glare assessment has been prepared by Environmental Ethos Pty Ltd and is provided herewith.

The facility will not have any external lighting, sirens or other security devices. It will be locked within a secure perimeter fence and monitored from remote and any issues will be managed by a local security company, which provides a local employment opportunity.

## 9.4 Construction Stage

Once built, the facility will remain largely static (with the exception of tracking arrays) and largely unmanned. Accordingly, the construction period will be the most impactful period of the facility’s lifespan. However, it is for a short finite period and – if managed appropriately – impacts can be controlled to an acceptable level.

The **Construction-Environment Management Plan** by Green Gold – attached herewith - includes a construction delivery timeframe of February to September. This is an approximate nine (9) month construction period, with the following expectant parameters:

- **Stage 1** – Early works consisting of piling tests, construction of site access, including vehicle crossing to Charam-Wombelano Road. During this stage, the number of workers on site should be up to 10.
- **Stage 2** – Civil works consisting of land clearing, levelling and earthworks, internal road construction, drainage installation, laydown area preparation, fencing installation, site establishment, preparation of delivery station and inverter station, and vegetation screening/landscaping. There should be 3-5 workers on site to carry out civil works.
- **Stage 3** – Mechanical works consisting of foundation piling (ramming and auguring), tracker installation, module installation and delivery. There should be 10-15 workers on site to carry out mechanical works. Delivery of tracker piles and modules will be scheduled before piling and mechanical installation commences.
- **Stage 4** – Electrical works consisting of solar cabling of aerials and conduits, DC main cabling via direct burial, MV cabling from inverter station to delivery station through direct buried, module connection, connection of junction boxes-inverters-delivery station, connection to grid and finally testing and commissioning. There should be 10-20 workers on site to carry out electrical works. Delivery of all electrical equipment including cables and accessories will be scheduled across this stage.

It is anticipated that all components will be delivered in containers by semi-trailer trucks and deliveries will be scheduled across the nine-month project construction period.

The Construction Management Plan sets out how construction activities will be carried out, including site logistics, operations and equipment to be used, construction hours and site management.

The proposed solar array system requires minimal earthworks; the support system is augured and rammed into the earth. Thus, there is less propensity for environmental impacts.

Deliveries of components will be scheduled across Stages 2, 3 and 4, as required. Solar components (support system, trackers, panels and cabling) are delivered in pre-packed containers that are lifted from the delivery truck onto the lay-down area.

The local road network will ultimately connect to the state-managed arterial road network for traffic to and from the site.

### **Construction traffic management**

The peak of construction activities will occur during the mechanical and electrical installation phases of construction. During these times, up to 20 workers could be on site during working hours. Workers will access the site in the morning and leave at the end of the working day in either their private car or work vehicle (ute or small truck). It is anticipated that there will be some car pooling, therefore it is expectant that **up to 15 cars/utes** would be accessing the site during the height of the construction period.

Materials deliveries will also occur throughout the construction period, with most components coming in during the mechanical works phase. Deliveries will be via rigid truck or semi-trailer and will be scheduled throughout the working day, to ensure efficient unloading and handing. It is anticipated that there will **up to 3 or 4 truck deliveries** during the height of the construction period.

The road network surrounding the site are local rural roads that are managed by the West Wimmera Shire Council. Groke-Harrow and Charam-Wombelano Road are all-weather sealed roads, capable of heavy vehicle access.

It is anticipated that most equipment and componentry will be delivered to site from Melbourne via the Wimmera Highway. Trucks would then access the site via Groke-Harrow Road, before turning left into the site on Charam-Wombelano Road.

It is considered that the local road network is more-than capable of safely accommodating the abovementioned construction traffic, especially considering that the road network is designed and maintained to accommodate agricultural traffic including milk tankers, harvest equipment and trucks as well as agricultural workers.

## **9.5 Operation Stage**

Other than during construction, the facility will be un-manned, other than intermittent periodical maintenance. The facility does not include batteries and there is no intention to store any dangerous goods on site.

The site will be remotely monitored in real time and local contractors would be rapidly deployed to deal with any fault or other matter, which provides the added benefit of local jobs for the local community.

Considering that the proposed facility will be un-manned, with limited moving componentry (other than the tracking arrays), it is considered that it will have a very minimal impact on the landscape.

From past project experience, we are aware of community interest in the following matters in relation to solar facilities.

### **Electromagnetic radiation (EMR)**

Small amounts of electromagnetic radiation (EMR) can be produced (emitted) by electrical componentry associated with a solar facility such as inverter, transformers and high voltage powerlines. However, the level of radiation dissipates quickly to becoming indistinguishable from background levels, over distance from the component.

The electromagnetic field (EMF) produced around an electric installation is non-ionising, within a range that exists in our daily lives from natural sources (which are most noticeably manifested in lightning discharges) and from appliances and electrical devices that surround our daily lives.

EMR from these types of components dissipates to indistinguishable levels over about 5-to-10 metres. The inverter is centrally located within the facility, well in excess of 100 metres from any boundary.

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### **Heat island effect**

In recent high-profile proposals, the community has raised concern for the potential of a “heat island effect” being created by the solar facility. This is where ambient temperatures are artificially raised by reflective heat from the facility, which could have impact on adjacent sensitive vegetation or horticultural operations.

Various studies have been undertaken and assessments presented as evidence for other contested solar facility proposals. In these instances, it was concluded that any discernible impacts would be unlikely and would be quickly dissipated over a relatively short separation distance. To this end, the guidelines have recommended a 30-metre separation distance between facilities and the property boundary.

The proposed layout achieves a significant setback from any nearby properties – even greater when considering properties in private ownership. Any “heat island effect” created by the proposal would have no discernible effects over the setback distances.

### **Environmental, risk and emergency management**

There are substantial elements of environmental management provided within the Construction Management Plan prepared by Green Gold. However, it is anticipated that a detailed EMP will be required as a condition of the sought permit.

The EMP could be required to address detailed matters, to be approved before construction begins, such as site management, dust and sediment control and traffic during construction.

The proposed facility will be remotely monitored in real-time. Thus, it will be under constant surveillance and alarm reporting to ‘on-call’ staff will occur automatically in the event of a fault or potentially dangerous situation. An operational management plan will be an integral part of the operation of the facility.

The site is not subject to any planning controls pertaining to flooding, and it is considered that the risk of flooding can be readily managed by suitable permit controls.

### **Site access and traffic management**

An access point will be provided to the satisfaction of the responsible road authority.

As set out above, during operation the facility will be monitored from remote, thus there will be no permanent workers on site. The facility will remain largely unattended, other than periodical visits by maintenance contractors or the instance of a fault that requires

site attendance. These contractors will carry out seasonal site maintenance (slashing and ground fuel control, etc), cleaning panels and periodical visual checks of componentry and equipment. Thus, it could be weeks between site visits and most visits would be no more than one or two contractors in a single vehicle (ute) carrying out visual checks for approximately one hour or so.

## 9.6 Decommissioning

The majority of components of the proposed facility (including panels) have a thirty-year design life expectancy. At this stage, the intention is to maintain/upgrade the facility over its life, as components wear out and new technology becomes available. Accordingly, the facility is likely to remain functional and operating into the foreseeable future.

However, should the facility's useful life end – for any number of commercial or practical reasons – the site can easily be remediated and reverted back to agriculture or converted to another use, as allowable under the planning scheme of the time.

The non-invasive mounting system makes decommissioning and removal of all panels and componentry a relatively simple process and would allow for the full remediation of the subject site to pre-development condition.

## 10 CFA Guidelines for Renewable Energy Installations

The Country Fire Authority (CFA) published its updated *Guidelines for Renewable Energy Installations*, in March 2021, in response to the Victoria's transition to renewable energy sources. With many projects under way and many others being planned, the CFA has been proactive in providing a framework for the assessment, design and operation of renewable energy facilities, including solar

With the revision of these Guidelines in March 2021, there is specific provision for **Micro Solar Farms** – which provides requirements catered to the smaller facilities that would otherwise be excessive for facilities of this scale – particular around static water supply and access.

### 1. Development of Installations

The proposal does not include batteries, and we are advised that there will be no storage of dangerous goods or buildings that must comply with the National Construction Code or will be considered at a workplace.

The information details set out in the guidelines are provided herein throughout this report and the supporting documents, including a Construction Management Plan by Green Gold. A detailed construction management plan, including emergency and risk management during construction will be developed prior to construction commencing.

### 2. Emergency Management

The CFA requires that facility operators develop an emergency management plan consistent with the requirements of Australian Standard 3745, including a fire management plan that specifically addresses risk management measures specific to fire risk and a fuel (vegetation) management plan. This will include site induction and risk overview for any staff or contractors accessing the facility.

It is considered that this requirement will be included in the conditions on the sought permit, to be provided and approved prior commencement of construction. The facility

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is to be provided with a clear perimeter for access and to provide a fire break between electrical installations and adjoining land. The soil beneath the panel block will be stripped of vegetation (grass) prior to construction and maintenance contractors will be engaged to manage seasonal grass and weeds, as necessary.

### 3. Site Infrastructure

The provisions to be considered for **access** have been considered and incorporated into the facility design, as appropriate, including the provision of a single access point to an existing all-weather road to the south of the site and a ten (10) metre perimeter fire break, that will allow fire and emergency vehicle access around the entire facility.

The provisions to be considered for **firefighting water supply** have been considered and incorporated into the facility design, as appropriate, including:

- Provision of an above-ground 22,500 litre static water storage tank, located directly inside the facility main gate, where it is accessible and suitable for use by fire personnel. It is submitted that the provision of 22,000 litres of on-site water is suitable, considering the size of the facility.
- The tank can be installed and maintained as per the CFA conditions, including all weather access, a hard-suction point that is positioned and of correct fitting type so that it is usable by fire personnel; protected from mechanical damage (i.e., bollards) and with an external water level indicator and signage.

### 4. Site Operation

A 10-metre-firebreak is to be provided between the compound perimeter fence and all componentry, including solar panels, inverters, etc. It is submitted that suitable conditions will be included in the sought permit to mandate the **Fuel/Vegetation Management** requirements within the guidelines are achieved as part of 'standard operational management' of the site and the facility.

### 5. Wind Facilities

Not applicable to the current application.

### 6. Solar Facilities

Part 2 of the Guidelines includes conditions that are particular to specific facility types, including Section 6.5 for **Micro Solar Farms**, including:

- *Solar farm operators must provide specifications for safe operating conditions for temperature and the safety issues related to electricity generation, including isolation and shut-down procedures, if solar panels are involved in fire. This information must be provided within the content of the Emergency Information Book.*
- *Solar arrays are to have grass vegetation maintained to 100mm under the array installation or mineral earth or non-combustible mulch such as stone.*

The requirement for banks of solar panels to observe separation distances of 6 metres is not applicable to Micro Solar Farms. It is submitted that the facility operator will provide the required information and uphold the other solar facility specific requirements, prior to commencement of use. This would be implemented through conditions on the sought permit.

### 7. Battery Installations

Not applicable to the current application.

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## 11 West Wimmera Planning Scheme

The proposed development has been assessed against the relevant Clauses of the West Wimmera Planning Scheme, specifically:

2.01	Context
2.02	Vision
2.03	Strategic Directions
2.04	Strategic framework plan
11	Settlement
12	Environmental & Landscape Values
13	Environmental Risks
14	Natural Resource Management
15	Built Environment and Heritage
17	Economic Development
19	Infrastructure
35.07	Farming Zone
42.01	Environmental Significance Overlay (ESO2)
52.06	Car Parking
52.17	Native Vegetation
53.13	Renewable Energy Facility
65	Decision Guidelines

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### 11.1 Municipal Planning Strategy

#### 2.01 Context

The West Wimmera LGA comprises significant extents of environmentally significant and agriculturally valuable land, which is supported by Clause 2.01, which states that:

*“Approximately 30 per cent of the Shire is public land. Significant natural features include the Big Desert and Little Desert National Parks, and the Mount Arapiles – Tooan State Park. West Wimmera Shire contains over 3000 wetlands, representing 25 per cent of Victoria’s wetlands. These wetlands are an important natural asset for the municipality and wider region.*

*The Shire is one of Victoria’s most diverse and productive agricultural areas. As such the local economy is directly affected by the performance of rural industry. Farms are getting bigger to become more viable, resulting in less demand on the small rural towns that service them.”*

The local landscape contains several of these wetlands – notably the Konnepra Swamp and Lake Charam being the closest wetlands to the west of the site. This proposal includes preliminary drainage plans to ensure that offsite drainage patterns are not impacted as a result of the development.

Further, an initial agronomic assessment of the subject site has been undertaken by Cadeema Pty. Ltd. to consider the agricultural utility of the site. The site is not currently used, nor is there is no evidence that the site has historically been used for any agricultural activities other than relatively low-yield stock grazing.

## 2.02 Vision

*“West Wimmera Shire’s Vision 2017-2020 is to ensure the municipality’s communities are healthy, thriving, diverse, harmonious, prosperous and self-sustaining, with regional and global connectivity.*

*From a land use and development perspective, this will be achieved by supporting the following objectives:*

- *Quality sustainable community infrastructure.*
- *Building on agricultural and business strengths and supporting economic development.*
- *Thriving, safe and diverse communities.*
- *Addressing health and wellbeing issues.*
- *Providing access to and promoting the natural environment.”*

The subject site is not identified under planning policy as being of heightened strategic significance in terms of the agricultural land value. Accordingly, it is not considered that the use of approximately 16 hectares of moderately productive land would undermine the economic base of either the West Wimmera Shire, or the State of Victoria.

Environmentally, the site is not identified as being ecologically significant. The development of a solar energy facility would not impact the habitat of the red-tailed black cockatoo – this habitat area is illustrated by the Environmental Significance Overlay that applies to the subject land.

## 2.03-4 Natural resource management

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Strategic directions

- *Retain viable rural land holdings within the Farming Zone.*
- *Support a rural agricultural community comprising a range of diversified enterprises that is efficiently managed and ecologically sustainable.*
- *Encourage a range of value-adding rural industries to establish in the Shire.*
- *Minimise land use conflicts in agricultural area*

The subject site has a total area of approximately 16 hectares, which represents only a fraction of the landholder’s 76-hectare property. As the facility effectively co-locates with established agriculture, it is supported by the above stated Strategic Directions for the West Wimmera Shire.

## 2.03-5 Built environment and heritage

The use and development of a Renewable Energy Facility and Utility Installation avoids any areas of Aboriginal cultural heritage to the west to the site, supported by the respective Strategy which state that planning is to:

- *Ensure the protection, maintenance and enhancement of places of historic and cultural significance, including both Aboriginal and post European settlement heritage sites.*

## 2.03-7 Economic development

The subject site represents a prime location to promote investment within the West Wimmera Shire. The site is adjacent to the Wombelano substation and provides for a renewable energy facility responsive to the surrounding agricultural and environmental context in accordance with the relevant Strategy to:

- Capitalise on economic development opportunities by building on the region's assets, particularly agriculture, energy, mining and tourism.

## 11.2 Planning Policy Framework

### 11.01 Settlement

*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.*

*Planning is to recognise the need for, and as far as practicable contribute towards [relevant matters included below, bold emphasis added]:*

- Health and safety.
- **Adaptation in response to changing technology.**
- **Economic viability.**
- Energy efficiency.

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*Planning is to:*

- *prevent environmental problems created by siting incompatible land uses close together; and*
- *facilitate sustainable development that takes full advantage of existing settlement patterns, and investment in transport and communication, water and sewerage and social facilities*

The proposed use of the land for a solar energy facility is considered to be compatible with adjoining agricultural land uses. The use and development of land would generate negligible impacts on the surrounding area – the primary concern for solar energy facilities is the visual impact that solar panels may have on surrounding amenity and/or utility. This has been established in VCAT precedent and Planning Panels appointed by the Minister for Planning as being relatively benign as a land use.

### 12.01-1S Protection of biodiversity

- *To assist the protection and conservation of Victoria's biodiversity.*

Strategies to achieve this objective include:

*Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.*

*Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.*

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

- *Cumulative impacts.*
- *Fragmentation of habitat.*
- *The spread of pest plants, animals and pathogens into natural ecosystems*

The proposed facility has been designed to uphold the protection of biodiversity objective through the abovementioned strategies. The site has sufficient area to accommodate the proposed facility, while minimising the impacts upon remnant trees. The facility layout has been carefully designed to provide adequate tree protection zones between trees and any site works or installations.

Notably, the proposal has been designed to minimise impacts on the existing paddock tree; thus, there will be limited impact on native vegetation or biodiversity sites on the land due to the proposal or any associated works.

The site is currently dominated by degraded pasture and opportunistic or invasive weed species. It does not contain any mapped wetlands.

### 13.02-1S Bushfire

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

The subject site and the surrounding area is within a Bushfire-Prone Area – which applies to most non-urban areas of Victoria. A detailed assessment against bushfire risk in accordance with the CFA Guidelines for Renewable Energy Installations, March 2021, is undertaken within Section 10 of this report.

### 13.05-1S Noise Abatement

- *To assist the control of noise effects on sensitive land uses.*

The facility will be an un-manned facility that would see only limited active work – generally when contractors are present on site.

The noise issues would primarily and almost exclusively be centered around the construction and de-commissioning of the site, which can be suitably implemented through a construction management plan via permit condition – to the satisfaction of the responsible authority. A Noise Impact Assessment by ADP Consulting has assessed any potential impacts from the proposed equipment during operation stage and deemed there would be no undue impacts to surrounding farm residences.

### 14.01-1S Protection of Agricultural Land

- *To protect the state’s agricultural base by preserving productive farmland.*

The proposal is supported by an agricultural assessment by Cadeema – who have provided both qualitative and quantitative evidence of the agricultural utility of the site. As an overview of the site’s productive capacity, the site is not suitable for “high value” agriculture.

### 14.01-2S Sustainable Agricultural Land Use

- *To encourage sustainable agricultural land use.*

The agricultural assessment by Cadeema concluded that the conversion of the subject land to a solar energy facility will not significantly compromise prior on-farm efficiency investment, not adversely impact site land use economics; thus, it is submitted that the proposal is a sustainable use of agricultural land.

### 15.02-1S Energy and Resource Efficiency

- *To encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.*

The intention of renewable energy facilities is to generate electricity that has significantly less greenhouse emissions than conventional fossil fuel sources. This is supported by the following strategies to:

- *Improve efficiency in energy use through greater use of renewable energy technologies and other energy efficiency upgrades.*

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- *Encourage retention of existing vegetation and planting of new vegetation as part of development and subdivision proposals.*

#### **17.01-1S Diversified Economy**

- *To strengthen and diversify the economy.*

The use and development of land is supported by planning policy that promotes the diversification of the economy, specifically to:

- *Protect and strengthen existing and planned employment areas and plan for new employment areas.*
- *Facilitate regional, cross-border and inter-regional relationships to harness emerging economic opportunities.*
- *Facilitate growth in a range of employment sectors, including health, education, retail, tourism, knowledge industries and professional and technical services based on the emerging and existing strengths of each region.*
- *Improve access to jobs closer to where people live. Support rural economies to grow and diversify.*

The use and development of a renewable energy facility within West Wimmera Shire will promote an opportunity for a regional Shire to transition toward renewable energy and a sustainable energy future.

#### **17.01-2S Innovation and Research**

- *To create opportunities for innovation and the knowledge economy within existing and emerging industries, research and education.*

The proposal represents a significant opportunity for a low-impact, sustainable diversification of the municipality's economic base, through the facilitation of investment in an emerging industry.

#### **19.01 Energy Supply**

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

The proposed facility would be located within close proximity to the Wombelano substation – providing an excellent location for essential infrastructure to provide a significant proportion of the Shire's population and economic base with a low-carbon energy source. This is supported by the following strategies to:

- *Support the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to industry and the community.*
- *Support transition to a low-carbon economy with renewable energy and greenhouse emission reductions including geothermal, clean coal processing and carbon capture and storage.*
- *Facilitate local energy generation to help diversify the local economy and improve sustainability outcomes.*

#### **19.01-2S Renewable Energy**

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

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State planning policy seeks to support renewable energy in appropriate locations. The proposed facility is a result of months of planning and assessment of potential candidate sites.

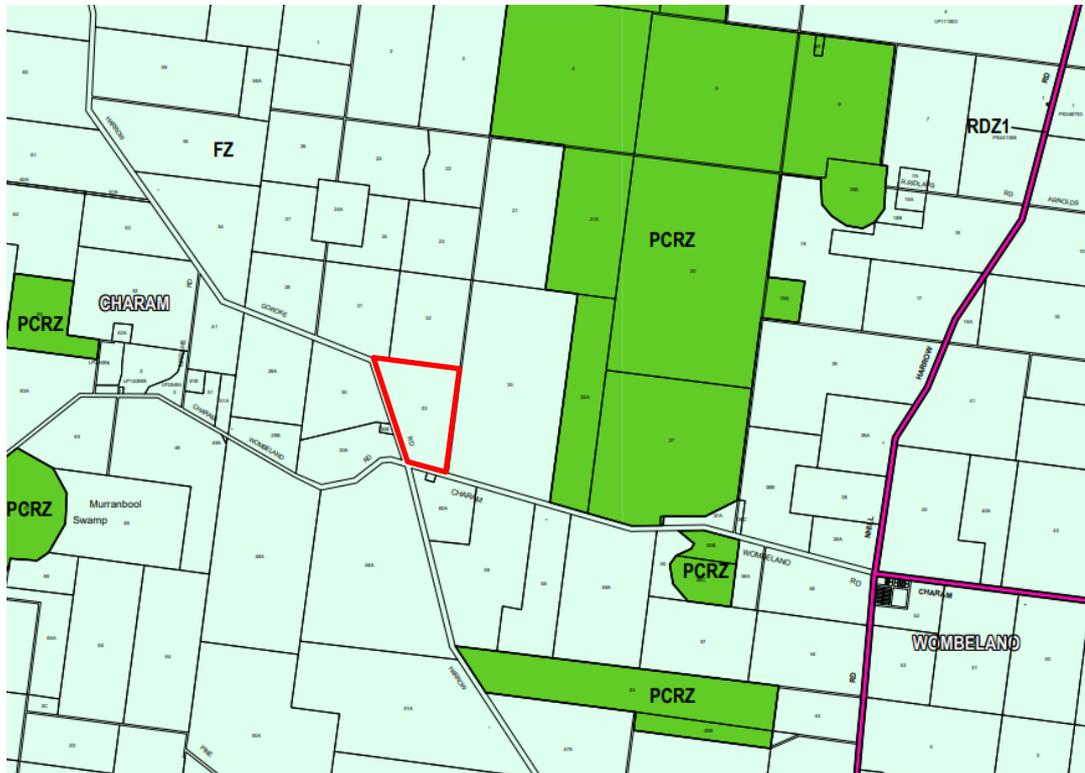
The proposed facility will provide approximately 5MW directly to the West Wimmera Shire where it is needed. Further, the regional policy for renewable energy with the Wimmera Southern Mallee region, Clause 19.01-2R, stipulates that planning should:

- Support the development of locally generated renewable energy, including bioenergy clusters.

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### 11.3 Farming Zone (FZ)

The subject site, in addition to the entirety of the surrounding area is located within the Farming Zone. Pursuant to the relevant provisions of Clause 35.07, a permit is required to both use and develop the land for Renewable Energy Facility (Solar Energy Facility) and Utility Installation in the Farming Zone.



Zone Map (Map No. 29 West Wimmera Planning Scheme)

In considering the proposal to use agricultural land for a Solar Energy Facility, the relevant purposes of this zone are:

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

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Whilst the proposed land use and development is for a “Solar Energy Facility”, which requires a permit within the Farming Zone, the use of the land for renewable energy production is consistent with Agricultural production – as defined under Clause 73.01 of the VPPs as “any form of primary production of renewable commodities.”

The above definition is quite explicit as to what does and does not constitute agricultural production, with the operative wording being renewable commodities (as highlighted above) which includes electricity from renewable sources. Accordingly, the Farming Zone quite clearly supports the proposed use – subject to consideration of the relevant Decision Guidelines of the Farming Zone:

<b>Farming Zone Decision Guidelines</b>	
<p><b>General issues</b></p> <ul style="list-style-type: none"> <li>• Any Regional Catchment Strategy and associated plan applying to the land.</li> <li>• The capability of the land to accommodate the proposed use or development, including the disposal of effluent.</li> <li>• How the use or development relates to sustainable land management.</li> <li>• Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.</li> <li>• How the use and development makes use of existing infrastructure and services.</li> </ul>	<p>The subject land is not affected by either the FO or LSIO, accordingly a detailed assessment against the considerations of flooding is not warranted for the site.</p> <p>The appended Plan of Existing Conditions by CS&amp;A illustrates the existing features and levels of the site – with a drainage outfall toward the south-west of the site.</p> <p>By siting the facility in close proximity to existing Powercor infrastructure (being the overhead 22kV power lines along the southern side of the Charam-Wombelano Road reserve), the proposal reduces the requirement for extensive overhead lines that could further impact productive agricultural uses or landscape amenity, either on the subject land or off-site.</p>
<p><b>Agricultural issues and the impacts from non-agricultural uses</b></p> <ul style="list-style-type: none"> <li>• Whether the use or development will support and enhance agricultural production.</li> <li>• Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.</li> <li>• The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.</li> <li>• The capacity of the site to sustain the agricultural use.</li> <li>• The agricultural qualities of the land, such as soil quality, access to</li> </ul>	<p>The proposal has been carefully designed to ensure that it will not impede existing agriculture within the surrounding area. The use of the land for a solar energy facility will be a low-impact use and has been carefully sited to avoid any adverse impact upon rural infrastructure – notably the existing rural roads that runs along the western and southern boundaries of the site.</p> <p>In considering the site’s agricultural capacity, whilst conducive to a limited range of agricultural pursuits, is not deemed be highly-productive agricultural land.</p> <p>Solar Energy Facilities are considered to be relatively benign in terms of their potential off-site impacts and it would be highly improbable that any existing and/or future</p>

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<p>water and access to rural infrastructure.</p> <ul style="list-style-type: none"> <li>Any integrated land management plan prepared for the site.</li> </ul>	<p>farmers would be impacted by the proposal. This has been established by previous VCAT precedent.</p> <p>The design of the facility is such that decommissioning of the facility will ensure that the land is capable of being returned to conventional agricultural land uses.</p>
<p><b>Environmental issues</b></p> <ul style="list-style-type: none"> <li>The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.</li> <li>The impact of the use or development on the flora and fauna on the site and its surrounds.</li> <li>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.</li> <li>The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.</li> </ul>	<p>Topographically, the subject land is relatively flat. Additionally, the natural features of the site are largely limited due to the site's history for agricultural uses.</p> <p>The proposed solar energy facility has been sited to limit the impacts on native vegetation, either directly or indirectly. The site has been an agricultural paddock for an extended period of time and is not identified as being within a biodiversity corridor. Though there are some isolated remnant trees; the site is otherwise cleared of native vegetation and the proposal seeks the removal of a single scattered remnant tree.</p> <p>Suitable drainage conditions can be imposed at the permit stage.</p> <p>The proposal is intended to facilitate the transition toward the State government's 25% renewable energy target by 2020. To this end, the proposed facility will contribute 5MW of renewable energy into the Victorian grid.</p>
<p><b>Design and siting issues</b></p> <ul style="list-style-type: none"> <li>The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.</li> <li>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.</li> <li>The impact on the character and appearance of the area or features</li> </ul>	<p>The facility is to be landscaped around the perimeter to reduce any potential visual impact of the facility from any nearby public land; all equipment will be located within the compound – behind the proposed landscaping – which will consist of native vegetation.</p> <p>The site will be accessed from the southern boundary from a local road managed by the West Wimmera Shire Council – providing access to equipment with the facility compound for maintenance and emergency purposes.</p> <p>During operation, the facility will be unmanned and would generate minimal</p>

<p>of architectural, historic or scientific significance or of natural scenic beauty or importance.</p> <ul style="list-style-type: none"> <li>• The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.</li> <li>• Whether the use and development will require traffic management measures.</li> </ul>	<p>traffic, with the peak traffic periods to be during the construction phase – as outlined within the relevant construction section of this report.</p> <div style="border: 2px solid red; padding: 5px; text-align: center; color: red;"> <p><b>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</b></p> </div>
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### 11.4 Environmental Significance Overlay (ESO2)

Along with most of the West Wimmera LGA, the subject site is subject to Schedule 2 of the Environmental Significance Overlay (ESO), which provides for the protection of **Red-Tailed Black Cockatoo Habitat Areas**.

Pursuant to Schedule 2 of the ESO, *a permit is not required* to Construct a building or construct or carry out works; or to remove, destroy or lop any **live** vegetation (noting that the existing red-gum tree does not appear to be hollow bearing).

The stated Purpose of the Environment Significance Overlay is:

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

Specific to the local ESO2, the complimentary stated environmental objective to be achieved is:

- *To protect the habitat of the endangered Red-tailed Black Cockatoo.*
- *To ensure the availability of suitable nesting sites for the Red-tailed Black Cockatoo through the protection of live and dead hollow bearing trees and other suitable trees within the bird's known nesting area.*
- *To protect the feeding habitat of the Red-tailed Black Cockatoo through the retention of Buloke and Stringybark trees.*

The proposed development has minimised the removal of any native vegetation that could provide habitat to the Red-tailed Black Cockatoo. Consequently, the proposed use and development provides an appropriate response to the ESO2 and is considered to be consistent with the decision guidelines of the ESO2 – which relate to the protection of habitat-yielding native vegetation.

### 11.5 Car Parking (Clause 52.06)

Pursuant to Clause 52.06-1, planning must consider the provision of car parking for all new land uses. The relevant purposes of this provision of the Scheme are:

- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To 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 provisions of Clause 52.06 do not prescribe a standardised car parking requirement for renewable energy facilities. Accordingly, Clause 52.06-6 defers car parking to be provided to the satisfaction of the responsible authority.

The proposed facility will be largely un-manned – capable of operating with irregular staffing that would be largely limited to maintenance and site inspections.

The most heavily staffed period of the site will be during the construction phase – where various contractors and machinery will be required for the construction duration.

Upon completion and establishment of the facility, persons accessing the site will typically be contractors with purpose-built vehicles and equipment, which would be driven directly to the point of work, rather than being parked in a designated space with the contractors walking to the work site.

Notwithstanding this, once construction is completed, the site amenities and storage area – just inside the front entrance gate – provides a logical and convenient location for periodical visitors to the site can park, if required.

This provision of car parking spaces would provide adequate car parking in scenarios where multiple contractors are required on the site concurrently. However, for the vast majority of the operation of the solar energy facility, the demand for car parking spaces would be zero.

In considering the relevant Decision Guidelines of Clause 52.06-10, and the information provided in this report, the provision of a designated car parking area is comfortably in excess of what would reasonable be required for an un-manned facility.

## 11.6 Native Vegetation (Clause 52.17)

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The proposal will impact upon **one (1) native tree** – being a 420cm diameter red gum – identified in the Ecological Assessment and the below figure. This tree is within the proposed facility, and while the proposal would not necessitate the removal of the tree – which would likely be retained – as greater than 10% of its TPZ has been compromised it must be considered lost and approval sought for its removal.

Pursuant to Clause 52.17-1, a planning permit must be sought for the removal of native vegetation. Accordingly, the proposal has been assessed against the three-step approach to **avoid, minimise, and offset** biodiversity impacts from the removal of native vegetation as detailed in the *Guidelines for the removal, destruction or lopping of native vegetation, 2017*.

The facility is sited on land that have been extensively cultivated for agricultural uses and thus has been extensively cleared of all but a few remnant trees.

Vegetation removal has been kept to the minimum extent necessary – with the removal of this tree avoiding the need to expand the overall footprint of the facility by

approximately 100m to the north of the current facility extent to achieve the same electrical output and minimise the need for further vegetation removal.



**Existing Tree to be impacted**

Red Gum considered to be lost due to TPZ encroachment **outlined in red**

Accordingly, it is considered that offsetting the loss of a single remnant tree represents an acceptable response to the consideration and decision guidelines of Clause 52.17.

### 11.7 Renewable Energy Facility (Clause 53.13)

The provisions of Clause 53.13 apply where it is proposed to use and develop land for a renewable energy facility. Consequently, the following application requirements are set out, as appropriate:

- **A site and context analysis, including:**
  - A site plan, photographs or other techniques to accurately describe the site and the surrounding area.
  - A location plan showing the full site area, local electricity grid, access roads to the site and direction and distance to nearby accommodation, hospital or education centre.
- **A design response, including:**
  - Detailed plans of the proposed development including, the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas.
  - 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.
  - Written report and assessment, including:



- 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.
- the potential amenity impacts such as noise, glint, light spill, emissions to air, land or water, vibration, smell and electromagnetic interference.
- the effect of traffic to be generated on roads.
- the impact upon Aboriginal or non-Aboriginal cultural heritage.
- the impact of the proposal on any species listed under the Flora and Fauna Guarantee Act 1988 or Environment Protection and Biodiversity Conservation Act 1999.
- A statement of why the site is suitable for a renewable energy facility including, a calculation of the greenhouse benefits.
- An environmental management plan including, a construction management plan, any rehabilitation and monitoring.

The above application requirements (where appropriate) are addressed at length within the relevant parts of this report. Clause 53.13 is a general provision that encompasses all renewable energy facilities, which includes solar energy facilities, but also extends to other renewable energy facilities. Consequently, not all provisions of the Clause are necessarily pertinent in all instances. For instance, a works approval is not required for a solar energy facility.

As a point of reference, various sources stipulate that the energy requirements to create a single MW of energy via conventional coal power can be as high as half a tonne per hour – representing a significant consumption of natural resources and carbon emissions where the proposed solar facility will continue to operate with zero emissions and only replacement of equipment being the major determinant of waste.

The proposed site is flat, and the proposed landscaping (when mature) will be comfortably higher than the proposed solar panels and other installations, which will appropriately mitigate any siting and visual amenity concerns.

## 11.8 General Provisions

The holistic considerations of the proposed renewable energy facility and the primary considerations of the proposal, including the merits of both preserving agricultural land against promoting renewable energy have been addressed at length in the various sub-sections of this report and the appended documentation.

Similarly, the orderly planning of the area, effect on the amenity of the area and other matters set out at **Clause 65.01** of the West Wimmera Planning Scheme for the **Approval of an application or plan** are addressed throughout various sections of this report. Accordingly, it is submitted that the proposal has been assessed against and deemed as being appropriate in in terms of all relevant considerations.

## 12 Conclusion

The proposal is for a new solar energy facility within the West Wimmera Shire municipality that will provide affordable clean energy for the local community, effectively contributing to the implementation of Victoria's transition to renewable energy.

The proposal is supported by the Grampians Regional Roadmap to Net Zero Emissions that sets out a high-level framework for achieving the region's aspirations

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and expectations for renewable energy by providing regional opportunities for the benefit of the regional community.

The 5MW output will supply local businesses, industry and houses and will produce enough energy to contribute to the transition of the West Wimmera Shire into a renewable municipality.

The panels would have a maximum height of approximately 2.6 metres – however for most of the day will be well below this height, as they track at right-angle to the sun, to maximise solar irradiation. The arrays are to be mounted on a light-weight rail and post system that would require limited earthworks and enables ease of decommissioning and conversion back to farming use (if appropriate at the end of the facility's design life).

The proposal will generate local employment opportunities for electrical and construction workers to build and install the facility; operations, maintenance and security jobs will be required ongoing.

It has been demonstrated in this report that the proposal meets the application requirements for a solar energy facility, including relevant sections of the West Wimmera Planning Scheme - particularly **Clause 53.13**; the **Solar Energy Facilities Design & Development Guidelines, August 2019** and the **CFA Guidelines for Renewable Energy Installations, March 2021**.

It is submitted that the information provided within this report and various supporting documents demonstrate that the proposal warrants planning approval.

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