



ADVERTISED PLAN

Charlton Solar Farm & Battery Storage Facility Planning Application Report



For Tetris Energy Pty Ltd
17 January 2022

**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**

Prepared for Tetris Energy

Version	Author	Date	Description of changes
1	Frank Brennan	09/12/2021	Draft Report
2	Frank Brennan	17/01/2022	Final Report
3			

Prepared by

Frank Brennan Consulting Services
6 Linnell Drive, Beachport SA 5280
PO Box 96, Beachport SA 5280

TABLE of CONTENTS

EXECUTIVE SUMMARY	1
FRANK BRENNAN CONSULTING SERVICES	6
1 PLANNING PROVISIONS	7
1.1 PERMIT TRIGGERS	7
1.2 ZONING	7
CLAUSE 35.07 FARMING ZONE (FZ)	7
1.3 ABORIGINAL CULTURAL HERITAGE SENSITIVITY	8
1.4 OVERLAYS	9
CLAUSE 44.06 BUSHFIRE MANAGEMENT OVERLAY (BMO)	9
1.5 PARTICULAR PROVISIONS	9
CLAUSE 52.06 CAR PARKING	9
CLAUSE 52.17 NATIVE VEGETATION	9
CLAUSE 53.13 RENEWABLE ENERGY FACILITY	9
1.6 GENERAL PROVISIONS	10
1.7 PLANNING POLICY FRAMEWORK	10
CLAUSE 11 SETTLEMENT	10
CLAUSE 12 ENVIRONMENTAL AND LANDSCAPE VALUES	11
CLAUSE 13 ENVIRONMENTAL RISKS AND AMENITY	12
CLAUSE 14.01 AGRICULTURE	14
CLAUSE 15 BUILT ENVIRONMENT AND HERITAGE	15
CLAUSE 17 ECONOMIC DEVELOPMENT	16
CLAUSE 18 TRANSPORT	16
CLAUSE 19 INFRASTRUCTURE	16
1.8 OTHER POLICIES AND GUIDELINES	17
SOLAR ENERGY FACILITIES – DESIGN AND DEVELOPMENT GUIDELINE (DELWP 2019)	17
CFA GUIDELINES FOR RENEWABLE ENERGY INSTALLATIONS (CFA 2019)	20
2 PLANNING ASSESSMENT	21
2.1 DESIGN RESPONSE	21
2.2 PROTECTING ENVIRONMENTAL VALUES AND FLORA AND FAUNA	21
2.3 GEOTECHNICAL AND HYDROLOGY	21
2.4 AGRICULTURAL IMPACT	22
2.5 THE PROPOSAL IS CONSISTENT WITH POLICIES THAT SEEK TO PROTECT VALUABLE AGRICULTURAL LAND. AMENITY IMPACTS	22
NOISE	22
VISUAL AND LANDSCAPE IMPACTS	22
ELECTROMAGNETIC INTERFERENCE	22
2.6 GLINT AND GLARE	23
2.7 NATURAL HAZARD MANAGEMENT	23
2.8 CUMULATIVE IMPACTS	24
2.9 TRAFFIC AND TRANSPORT	24
3 CONCLUSION	24

EXECUTIVE SUMMARY

This report is provided in support of a planning permit application for the proposed Charlton Solar Farm facility, a proposed 4.98MW_{AC} solar energy facility and 4MW battery storage facility located approximately 6.0 kilometres east on Charlton along the Calder Highway.

The subject site for the proposed solar farm facility is allotment 2 in Plan of Subdivision 403054, 126 Biddlestones Road, Charlton, inclusive of the Biddlestones Road and Calder Highway road reserves for connection of the electricity transmission line.

The proposal is for the use and development of the land for the purposes of establishing a solar farm, battery storage facility and associated utility infrastructure.

The following permit triggers apply:

- Clause 19.01 Renewable Energy
 - To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met
 - Facilitate renewable energy development in appropriate locations
- Clause 35.07 Farming Zone (FZ)
 - Buildings within 100 metres from a Category 1 road and 5 metres from a boundary (Schedule to FZ)
- Clause 52.05 Signs
 - Business identification signage
- Clause 53.13 Renewable Energy Facility (Other than Wind Energy Facility)
 - To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area

This application has been assessed against the relevant policies and guidelines of the Buloke Planning Scheme, including the provisions of Clause 53.13 Renewable Energy Facility and the Solar Energy Facilities Design and Development Guideline DELWP August 2019 (Solar Farm Guidelines). The proposal is strongly supported by the range of policies and guidelines that apply, particularly those which seek to facilitate renewable energy facilities in locations that will have minimal amenity impacts and protect important agricultural land.

A brief summary of the relevant thematic issues is provided below for consideration. This includes reference to technical expert reports that accompany the application.

Flora and fauna impacts

An Ecological Assessment has been prepared by Okologie Consulting and submitted with the Permit Application.

Heritage

The site is not affected by any Heritage Overlay or registered heritage sites. There are no 'Areas of Aboriginal Cultural Heritage Sensitivity' directly affecting the site or in proximity of the site.

Geotechnical and hydrology

Prior to construction appropriate geotechnical investigations will be undertaken on the site to provide the design parameters for the construction of the proposed solar farm and associated infrastructure.

A Construction Environment Management Plan will be prepared and implemented to ensure there are no adverse environmental impacts from the construction of the facility.

Agricultural impacts

The subject site is currently used for cropping and some livestock grazing (sheep) . The land is not considered to be inherently valuable agricultural land and that the proposal will not have any significant impact on the agricultural capabilities of the property or the surrounding properties.

Livestock (sheep) grazing will still be undertaken on the subject site amongst the solar arrays. The proposal is consistent with policies that seek to protect valuable agricultural land.

The photo below shows the subject site and the use of the land for cropping.



Traffic Impacts

A Traffic and Transport Assessment has been prepared by Impact Traffic Engineering Pty Ltd and submitted with the Permit Application.

The traffic route to access the subject site will from the Calder Highway and onto Biddlestones Road. The section of Biddlestones Road (as shown in the photos below) that is required to service the proposed solar farm facility will be upgraded to an all-weather standard from the Calder Highway to the solar farm site access point.





All other impacts on the road network through construction and operational will be comfortably within the design capabilities and expected traffic volumes of the relevant road network, therefore acceptable and in accordance with the relevant sections of the Buloke Planning Scheme, and subject to compliance with any permit that may need to be gained.

Glint and Glare Impacts

A Glint and Glare Assessment has been prepared by YZ Consulting Pty Ltd and submitted with the Permit Application. The Forge Solar Glare Analysis predicted that there would be no impact on any nearby dwellings, from the Calder Highway or from the railway to the north.

The nearest aerodrome to the subject site is the Charlton Airport located on the Charlton St Arnaud Road approximately 7.5 kilometres to the west of the solar farm site. The solar farm facility will have no impact on the operation of the airport.

With the solar arrays set back 30 metres from the Calder Road boundary and the current and future vegetation screening it is considered there will be no impact from glint or glare on passing traffic.

Noise impacts

An Acoustic Assessment has been prepared by DP Engineering Pty Limited and submitted with the Permit Application.

The subject site has been selected due to the proximity away from sensitive receivers (residential dwellings), with the nearest dwelling located approximately 1.21 kilometres away to the south-east along the Calder Highway.

During the construction phase there will be some noise associated with the construction of the access track, drilling, and piling for the solar array. These works will be contained to the construction hours and outlined in detail in the Environmental Management Plan.

Once operational, the sources for noise from the solar farm are negligible and generated

primarily from the cooling fans associated with the inverter, transformer and battery storage.

The solar panel trackers are mechanical and move every ~15 minutes, this is a very subtle adjustment and not audible from a distance.

The proposed solar farm facility complies with the relevant noise requirements of the Solar Farm Guidelines at Clause 53.13.

Visual amenity and landscape impacts

The subject site has extensive existing native vegetation screening along the southern property boundary adjacent the Calder Highway, on its eastern property boundary adjacent the Howells Hill Scenic Reserve and on its western boundary adjacent Biddlestones Road. This vegetation will provide an effective screen from adjoining roads and properties. The existing vegetation screening along the Calder Highway is shown in the photo below.



Photo – showing the existing vegetation screening on the southern property boundary adjacent the Calder Highway.

The location of the inverter and substation has been selected to be in close proximity to the existing 22kV line. This will mean that the visual amenity impact is kept consistent with existing land uses.

The visual amenity impact of the solar farm on neighbouring dwellings is expected to be low primarily due to the substantial separation distances to the dwellings, security fences and existing screening vegetation.

Below is an aerial map showing the location and distance from the dwellings to the array.



Aerial Map – showing the location and distances to nearest dwellings

The facility is visible but considered to be low impact and acceptable within the context of the site and wider landscape.

There are no significant views to the facility from private receivers/dwellings. No landscape overlays or additional policies that give greater significance to the landscape apply.

Aboriginal Cultural Heritage Sensitivity

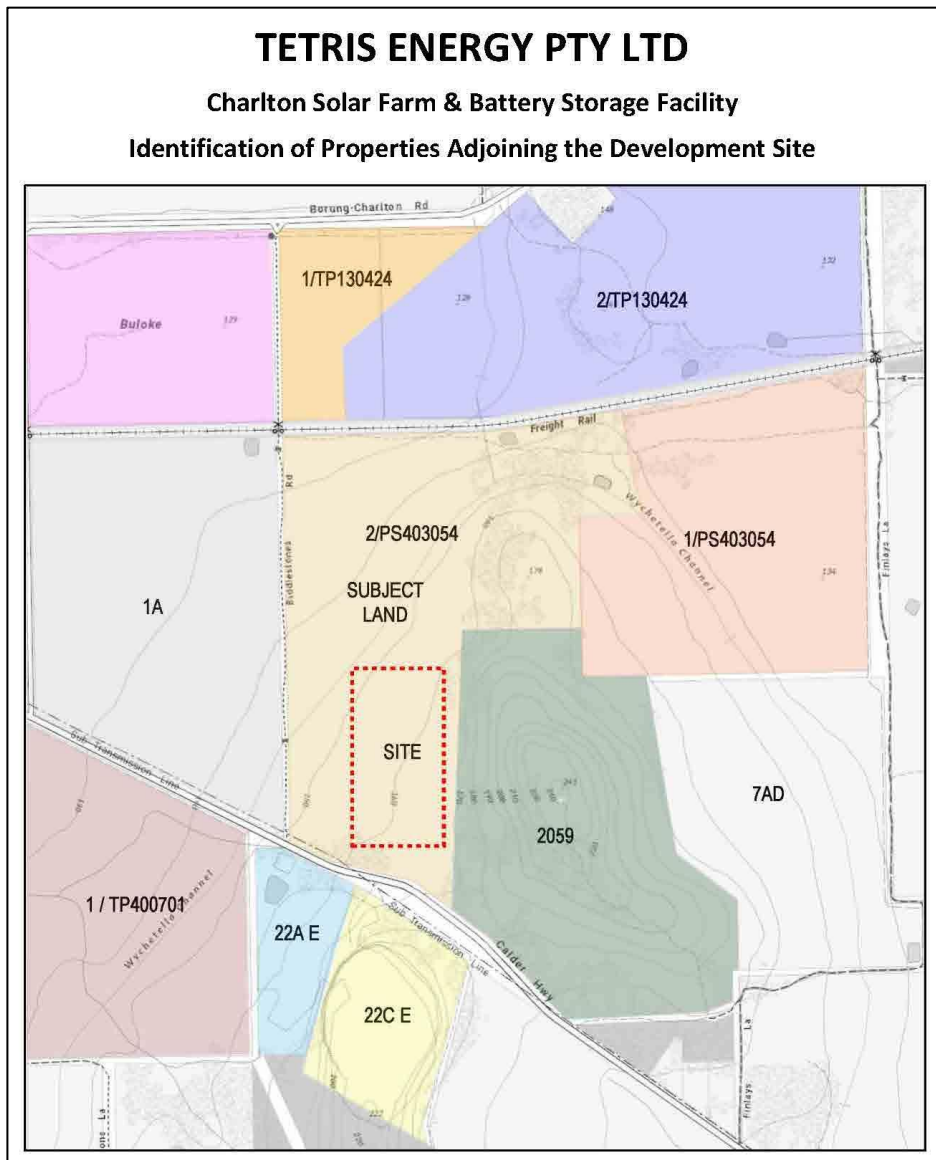
It is considered that the proposed development does not trigger the requirement for the production of a Cultural Heritage Management Plan.

Site Context

To the east of the subject land is the Howells Hill Scenic Reserve, while to the immediate south is the Boral mineral quarry. The land adjoining the subject land to the west and north is utilised for cropping and livestock grazing land uses.

The proposed solar farm & battery storage facility is not expected to have a negative impact on the continued use of the adjoining land for their existing purposes or operations.

The map below shows the context of the subject land with its surrounding land uses.



Conclusion

The balance of policies under the Buloke Planning Scheme supports the proposal, with particular reference to key provisions of Clause 35.07 (Farming Zone), Clause 53.13 (Renewable Energy Facility) and the Solar Farm Guidelines.

A handwritten signature in black ink, appearing to read "F.N. Brennan", is written over a circular stamp or seal.

F.N. (Frank) Brennan PSM MPIA
Accredited Planning Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES

1 PLANNING PROVISIONS

1.1 PERMIT TRIGGERS

A permit is required under the following provisions of the Buloke Planning Scheme:

- Clause 35.07 Farming Zone (FZ)
 - Buildings within 100 metres from a Category 1 road and/or 5 metres from a boundary (Clause 35.07-4 Building & Works & FZ Schedule)
 - Building within 100 metres from a waterway (Clause 35.07-4 Building & Works)
 - Renewable Energy Facility (Table of Uses – Section 2 Permit Required)
 - Utility Installation (Table of Uses – Section 2 Permit Required)
- Clause 52.05 Signs
 - Business identification signage exceeding 3 sqm, Category 4 Sensitive Areas

This application also seeks to provide car parking spaces to the satisfaction of the responsible authority under Clause 52.06-6.

1.2 ZONING

CLAUSE 35.07 FARMING ZONE (FZ)

Under the provisions of the Farming Zone at Clause 35.07 a permit is required to use and develop the land for the purposes of a renewable energy facility and utility installation.

A renewable energy facility and utility installation is specified in Section 2 as a permit required use. A permit is triggered for buildings and works associated with a Section 2 use.

The relevant purposes of the Farming Zone are:

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To provide for the use of land for agriculture.

To encourage the retention of productive agricultural land.

To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.

To encourage the retention of employment and population to support rural communities.

To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

To provide for the use and development of land for the specific purposes identified in a schedule to this zone.

The relevant decision guidelines for the responsible authority to consider are:

General issues

The Municipal Planning Strategy and the Planning Policy Framework.

Any Regional Catchment Strategy and associated plan applying to the land.

The capability of the land to accommodate the proposed use or development, including the disposal of effluent.

How the use or development relates to sustainable land management.

Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.

How the use and development makes use of existing infrastructure and services.

Agricultural issues and the impacts from non-agricultural uses

Whether the use or development will support and enhance agricultural production.

Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.

The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.

The capacity of the site to sustain the agricultural use.

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

Any integrated land management plan prepared for the site.

Environmental issues

The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.

The impact of the use or development on the flora and fauna on the site and its surrounds.

The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.

The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.

Design and siting issues

The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.

The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.

The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.

The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.

Whether the use and development will require traffic management measures.

Signs

Sign requirements are at Clause 52.05. This zone is in Category 4.

1.3 ABORIGINAL CULTURAL HERITAGE SENSITIVITY

Land used to generate electricity is defined as a high-impact activity under Division 5 of the *Aboriginal Heritage Regulations 2007*. A Cultural Heritage Management Plan (CHMP) may be required under these regulations if the proposal:

- requires an EES under the Environment Effects Act 1978

- is in an area of cultural heritage sensitivity that has not previously had significant ground disturbance.

In evaluating whether a CHMP is required, it is determined based on our review of the legislation that the project does not require a CHMP as there are no registered Aboriginal Cultural Heritage Sensitivity area or overlay in close proximity to the project area.

1.4 OVERLAYS

CLAUSE 44.06 BUSHFIRE MANAGEMENT OVERLAY (BMO)

The subject site is not located in a Bushfire Management Overlay (BMO) area.

1.5 PARTICULAR PROVISIONS

CLAUSE 52.06 CAR PARKING

Table 1 at Clause 52.06 of the Buloke Planning Scheme outlines the car parking requirements associated with various uses. A renewable (solar) energy facility is not listed in Table 1.

Clause 52.06-6 states that:

Where a use of land is not specified in Table 1 or where a car parking requirement is not specified for the use in another provision of the planning scheme or in a schedule to the Parking Overlay, before a new use commences or the floor area or site area of an existing use is increased, car parking spaces must be provided to the satisfaction of the responsible authority.

Therefore, no permit is required under Clause 52.06 for the application, however parking for the new use of a solar energy facility must be provided to the satisfaction of the responsible authority and this application seeks that approval.

CLAUSE 52.17 NATIVE VEGETATION

With no native vegetation to be removed as part of the development no permit application is required to be lodged pursuant to Clause 52.17.

CLAUSE 53.13 RENEWABLE ENERGY FACILITY

This clause applies to the assessment of any renewable energy facility application (other than wind energy facility) under the Southern Grampians Planning Scheme.

The purpose of this clause is to facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area. The following decision guidelines are relevant to the application and must be considered in deciding on the application:

The Municipal Planning Strategy and the Planning Policy Framework.

The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.

The impact of the proposal on significant views including visual corridors and sightlines.

The impact of the proposal on strategically important agricultural land, particularly within declared irrigation districts.

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

The impact of the proposal on the road network.

Solar Energy Facilities Design and Development Guideline (Department of Environment, Land, Water and Planning, August 2019)

Further guidance on each of these decision guidelines is contained within the Solar Farm Guidelines which is discussed in following sections of this report.

1.6 GENERAL PROVISIONS

The responsible authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines contained at Clause 65.01 Approval of an application or plan.

This includes:

The matters set out in section 60 of the Act

Any significant effects the environment, including the contamination of land, may have on the use or development.

The Municipal Planning Strategy and the Planning Policy Framework

The purpose of the zone, overlay or other provision.

Any matter required to be considered in the zone, overlay or other provision

The orderly planning of the area

The effect on the environment, human health and amenity of the area

The proximity of the land to any public land

Factors likely to cause or contribute to land degradation or salinity or to reduce water quality

Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site

The extent and character of native vegetation and the likelihood of its destruction

Whether native vegetation is to be or can be protected, planted or allowed to regenerate

The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land to minimise any such hazard

The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

The impact the use or development will have on the current and future development and operation of the transport system.

1.7 PLANNING POLICY FRAMEWORK

This section outlines the policies of the Buloke Planning Scheme that are of particular relevance to this application.

This includes the Municipal Strategic Statement and Local Planning Policies that are to be integrated into the Planning Policy Framework.

CLAUSE 11 SETTLEMENT

This clause is an overarching policy for settlement in Victoria. Of particular note to this application are the following policies:

Planning is to prevent environmental and amenity problems created by siting incompatible land uses close together.

Planning is to facilitate sustainable development that takes full advantage of existing settlement patterns and investment in transport, utility, social, community and commercial infrastructure and services.

CLAUSE 12 ENVIRONMENTAL AND LANDSCAPE VALUES

This clause focuses on protecting ecological systems, biodiversity, and identified environments or landscapes.

Planning should protect, restore and enhance sites and features of nature conservation, biodiversity, geological or landscape value.

CLAUSE 12.01-S PROTECTION OF BIODIVERSITY

Objective

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

Strategies

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

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

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

Cumulative impacts.

Fragmentation of habitat.

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

Avoid impacts of land use and development on important areas of biodiversity.

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

Assist in the identification, protection and management of important areas of biodiversity.

CLAUSE 12.03-1S RIVER CORRIDORS, WATERWAYS, LAKES AND WETLANDS

Objective

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

Strategies

Protect the environmental, cultural and landscape values of all water bodies and wetlands.

Ensure development responds to and respects the significant environmental, conservation, cultural, aesthetic, open space, recreation and tourism assets of water bodies and wetlands.

Ensure development is sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands.

Ensure development does not compromise bank stability, increase erosion or impact on a water body or wetland's natural capacity to manage flood flow.

CLAUSE 12.05-2S LANDSCAPES

Objective

To protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments.

Strategies

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

CLAUSE 13 ENVIRONMENTAL RISKS AND AMENITY

This clause addresses environmental risks and amenity. The head provision outlines the following policies:

Planning should strengthen the resilience and safety of communities by adopting a best practice environmental management and risk management approach.

Planning should identify, prevent and minimise the risk of harm to the environment, human health, and amenity through:

- *Land use and development compatibility.*
- *Effective controls to prevent or mitigate significant impacts..*

Planning should identify and manage the potential for the environment and environmental changes to impact on the economic, environmental or social wellbeing of society.

Planning should ensure development and risk mitigation does not detrimentally interfere with important natural processes.

Planning should prepare for and respond to the impacts of climate change.

CLAUSE 13.01-1S NATURAL HAZARDS AND CLIMATE CHANGE

Objective

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

Strategies

Consider the risks associated with climate change in planning and management decision making processes.

Identify at risk areas using the best available data and climate change science.

Integrate strategic land use planning with emergency management decision making.

Direct population growth and development to low risk locations.

Develop adaptation response strategies for existing settlements in risk areas to accommodate change over time.

Ensure planning controls allow for risk mitigation or risk adaptation strategies to be implemented.

Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.

CLAUSE 13.02-1S BUSHFIRE PLANNING

This clause applies to all land within a designated Bushfire Prone Area, therefore applies to the subject site. Bushfire risk is a consideration for any solar project.

Objective

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

Strategies**Bushfire hazard identification and assessment**

Identify bushfire hazard and undertake appropriate risk assessment by:

Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.

Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.

Considering and assessing the bushfire hazard on the basis of:

Landscape conditions - meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of a site;

Local conditions - meaning conditions in the area within approximately 1 kilometre of a site;

Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and

The site for the development.

Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.

CLAUSE 13.05-1S NOISE ABATEMENT**Objective**

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

Strategy

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

CLAUSE 13.07-1S LAND USE COMPATIBILITY**Objective**

To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.

Strategies

Ensure that use or development of land is compatible with adjoining and nearby land uses.

Avoid locating incompatible uses in areas that may be impacted by adverse off-site impacts from commercial, industrial and other uses.

Avoid or otherwise minimise adverse off-site impacts from commercial, industrial and other uses through land use separation, siting, building design and operational measures.

CLAUSE 14.01 AGRICULTURE

CLAUSE 14.01-1S PROTECTION OF AGRICULTURAL LAND

Objective

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

Strategies

Identify areas of productive agricultural land, including land for primary production and intensive agriculture.

Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.

Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.

Protect productive farmland that is of strategic significance in the local or regional context.

Protect productive agricultural land from unplanned loss due to permanent changes in land use.

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

Desirability and impacts of removing the land from primary production, given its agricultural productivity.

Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.

Compatibility between the proposed or likely development and the existing use of the surrounding land.

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

Land capability.

CLAUSE 14.01-2S SUSTAINABLE AGRICULTURAL LAND USE

Objective

To encourage sustainable agricultural land use.

Strategies

Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources.

Support the development of innovative and sustainable approaches to agricultural and associated rural land use practices.

Support adaptation of the agricultural sector to respond to the potential risks arising from climate change.

Encourage diversification and value-adding of agriculture through effective agricultural production and processing, rural industry and farm-related retailing.

Assist genuine farming enterprises to embrace opportunities and adjust flexibly to market changes.

Support agricultural investment through the protection and enhancement of appropriate infrastructure.

Facilitate ongoing productivity and investment in high value agriculture.

Facilitate the establishment and expansion of cattle feedlots, pig farms, poultry farms and other intensive animal industries in a manner consistent with orderly and proper planning and protection of the environment.

Ensure that the use and development of land for animal keeping or training is appropriately located and does not detrimentally impact the environment, the operation of surrounding land uses and the amenity of the surrounding area.

CLAUSE 14.02-1S CATCHMENT PLANNING AND MANAGEMENT

Objective

To assist the protection and restoration of catchments, water bodies, groundwater, and the marine environment.

Strategies

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

Require appropriate measures to restrict sediment discharges from construction sites.

Ensure planning is coordinated with the activities of catchment management authorities.

CLAUSE 15 BUILT ENVIRONMENT AND HERITAGE

This head clause seeks to ensure the recognition of the importance of energy and resource efficiency in the built environment.

CLAUSE 15.02-1S ENERGY RESOURCE EFFICIENCY

Objective

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

Strategies

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

CLAUSE 15.03-2S ABORIGINAL CULTURAL HERITAGE

Objective

To ensure the protection and conservation of places of Aboriginal cultural heritage significance.

Strategies

Provide for the protection and conservation of pre-contact and post-contact Aboriginal cultural heritage places.

Ensure that permit approvals align with the recommendations of any relevant Cultural Heritage Management Plan approved under the Aboriginal Heritage Act 2006.

CLAUSE 17 ECONOMIC DEVELOPMENT

This clause seeks to provide for economic well-being.

CLAUSE 17.01-1S DIVERSIFIED ECONOMY

Objective

To strengthen and diversify the economy.

Strategies

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.

CLAUSE 18 TRANSPORT

CLAUSE 18.02-4S ROADS

Objective

To manage the road system to achieve integration, choice and balance by developing an efficient and safe network and making the most of existing infrastructure.

CLAUSE 19 INFRASTRUCTURE

CLAUSE 19.01-1S ENERGY SUPPLY

Objective

To facilitate appropriate development of energy supply infrastructure.

Strategies

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.

CLAUSE 19.01-2S RENEWABLE ENERGY

Objective

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

Strategies

Facilitate renewable energy development in appropriate locations.

Protect energy infrastructure against competing and incompatible uses.

Develop appropriate infrastructure to meet community demand for energy services.

Set aside suitable land for future energy infrastructure.

Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.

Recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year.

1.8 OTHER POLICIES AND GUIDELINES

SOLAR ENERGY FACILITIES – DESIGN AND DEVELOPMENT GUIDELINE (DELWP 2019)

The Victorian Government has developed the *Solar Energy Facilities - Design and Development Guideline* (August 2019) aiming to help outline the assessment and development process for large-scale solar energy facilities in Victoria.

This guideline provides:

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

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

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

- detailed plans and elevations of the proposed development including the layout and height of the facility and associated building and works, and their materials, reflectivity, colour, lighting and landscaping
- detailed plans and elevations of the proposed transmission infrastructure and electricity utility works required to connect the facility to the electricity network, access roads and parking areas
- accurate visual simulations illustrating the development in the context of the surrounding area and from key public viewpoints

- the extent and assessment of any vegetation removal
- a rehabilitation plan for the site.

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

- a description of the proposal including the types of process to be utilised, materials to be stored and the treatment of waste
- an explanation of how the proposed design derives from and responds to the site analysis including cumulative impacts with any other existing and proposed renewable energy facilities in the surrounding area
- an explanation of agricultural values and production including irrigation infrastructure impacts and whether any land is productive farmland of strategic significance
- whether a works approval or licence is required from EPA Victoria or another authority administering the regulatory requirements of the Dangerous Goods Act 1985
- a description of how the proposal responds to any significant landscape features for the area identified in the planning scheme.
- An assessment of:
 - the potential amenity impacts (such as noise; glint or glare; light spill; emissions to air, land or water; vibration; smell and electromagnetic interference): an assessment of potential noise impacts should have regard to EPA Victoria's Noise from industry in regional Victoria guidelines
 - the effects of traffic to be generated on roads
 - the visual impact of the proposal on the surrounding landscape
 - the visual impact on abutting land that is described in a schedule to the National Parks Act 1975 and Ramsar wetlands and coastal areas
 - the impact of the proposal on any species (including birds and bats) listed under the Flora and Fauna Guarantee Act 1988 or the Environment Protection and Biodiversity Conservation Act 1999
 - the impacts on Aboriginal or non-Aboriginal cultural heritage

The Solar Farm Guidelines also give further detail around the decision guidelines of Clause 53.13 Renewable Energy Facility as follows:

The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.

- whether the impact is acceptable or can be managed in accordance with relevant Australian and New Zealand standards or other regulatory requirements.
- if the assessment was undertaken by a suitably qualified person
- the spatial extent, length and duration of the impact and whether it is for a limited or extended period
- whether the impact can be mitigated via an appropriate built form, landscaping or other management response.

The impact on significant views including visual corridors and sightlines

- the amount of change proposed by works including earthworks, and the sensitivity of the landscape features to that change

- the visibility of the solar energy facility from vantage points accessible to the public and the ability to screen areas of development from view
- the locations and distances from which a solar energy facility can be viewed from a sensitive land use
- the significance of the landscape as described in the planning scheme including in an overlay, a relevant strategic study or by landscape features referenced in the planning scheme
- landscape values associated with nearby land such as specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres.

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

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

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

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

The impact of a proposal on the local road network.

- whether access to and from the site meets requirements established by the relevant road management authority
- the impact of traffic movements to and from the site with the road network operating normally
- the impact of traffic movements causing wear and tear on the road network.

CFA GUIDELINES FOR RENEWABLE ENERGY INSTALLATIONS (CFA 2019)

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

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

CFA requires that facility operators develop an emergency management plan consistent with the requirements of Australian Standard 3745: *Planning for emergencies in facilities*. It is expected this to be a condition of any planning permit that may issue.

There are certain access requirements some of which include:

Adequate access to and within the facility will assist CFA in responding to and managing fires on-site. To enable access for fire vehicles, CFA requires that the following provisions be considered:

3.1.1 A four (4) metre perimeter road should be constructed within the ten (10) metre perimeter fire break.

3.1.2 Roads are to be of all-weather construction and capable of accommodating a vehicle of 15 tonnes.

3.1.3 Constructed roads should be a minimum of four (4) metres in trafficable width with a four (4) metre vertical clearance for the width of the formed road surface.

Specific guidelines for solar energy facilities include:

6.1.1 Solar facilities are to have a 6 metre separation between solar panel banks/rows.

6.2.1 Solar farm operators must provide specifications for safe operating conditions for temperature and the safety issues related to electricity generation, including isolation and shut-down procedures, if solar panels are involved in fire. This information must be provided within the content of the emergency information book.

6.3.1 Solar arrays are to have grass vegetation maintained to 100mm under the array installation or mineral earth or non-combustible mulch such as stone.

6.3.2 Where practicable, solar energy installations can be sited on grazed paddocks. In this case, vegetation is to be managed as per the requirements of this guideline, or as informed through a risk management process.

Whilst the subject site is not within a Bushfire Management Overlay (BMO) the recommendations for fuel management will be considered and contained in any Fire Management Plan that may be required.

2 PLANNING ASSESSMENT

This section outlines how the proposal responds to the provisions and guidelines of the Buloke Planning Scheme. Matters are addressed thematically.

Clause 53.13 Renewable Energy Facility provides a framework for assessing amenity and design themes relevant to a solar renewable energy facility. The Solar Farm Guidelines as directed by Clause 53.13 also forms an integral part of assessment.

2.1 DESIGN RESPONSE

The key strengths of the proposed site are:

- its unobtrusive position with substantial existing vegetative screening that will be retained
- close proximity to the electricity grid and existing grid connection
- limited sensitive receivers in close proximity
- low agricultural value of the land.

The design responds to the site by:

- avoiding removal of native vegetation and existing farm dam in the north east
- locating the infrastructure away from Areas of Cultural Heritage Sensitivity
- setting infrastructure back from vegetation that surrounds the site to the west, south and east of infrastructure
- utilising existing screening
- having regard to the CFA guidelines for renewable energy facilities

The proposed solar energy facility on the agricultural land will implement a range of techniques to reduce soil degradation by:

- maintaining soil permeability
- avoiding fertilisers or herbicides
- avoid bringing 'alien' soil to the site
- monitoring activities across the year.

2.2 PROTECTING ENVIRONMENTAL VALUES AND FLORA AND FAUNA

An Ecological Assessment has been prepared by Okologie Consulting and submitted with the Permit Application.

2.3 GEOTECHNICAL AND HYDROLOGY

Prior to construction appropriate geotechnical investigations will be undertaken on the site to provide the design parameters for the construction of the proposed solar farm and associated infrastructure.

A Construction Environment Management Plan will be prepared and implemented to ensure there are no adverse environmental impacts from the construction of the facility.

The site is considered to be suitable for a solar energy facility, with no apparent geotechnical risks that would affect the viability of the project. Salinity, landslip or erosion risks are not apparent on the subject site, in accordance with the Solar Farm Guidelines and General Provisions at Clause 65.01. Any potential for adverse impacts may be suitably managed through appropriate permit conditions.

2.4 AGRICULTURAL IMPACT

The subject site is currently used for cropping and livestock grazing (sheep) and is not considered to be inherently valuable agricultural land and that the proposal will not have any significant impact on the agricultural capabilities of the property or the surrounding properties. Livestock (sheep) grazing will still be undertaken on the subject site amongst the solar arrays.

2.5 THE PROPOSAL IS CONSISTENT WITH POLICIES THAT SEEK TO PROTECT VALUABLE AGRICULTURAL LAND. AMENITY IMPACTS

NOISE

An Acoustic Assessment has been prepared by Arup Australia Pty Limited and submitted with the Permit Application.

The subject site has been selected due to the proximity away from sensitive receivers (residential dwellings), with the nearest dwelling located approximately 1.21 kilometre away to the south-east.

During the construction phase there will be some noise associated with the construction of the access track, drilling, and piling for the solar array. These works will be contained to the construction hours and outlined in detail in the Environmental Management Plan.

Once operational, the sources for noise from the solar farm are negligible and generated primarily from the cooling fans associated with the inverter, transformer and storage battery. The solar panel trackers are mechanical and move every ~15 minutes, this is a very subtle adjustment and not audible from a distance. The proposed solar farm facility complies with the relevant noise requirements of the Solar Farm Guidelines at Clause 52.13.

VISUAL AND LANDSCAPE IMPACTS

The subject site has extensive existing native vegetation screening along the northern and eastern property boundaries providing an effective screen from adjoining roads and properties. Additional vegetation landscaping is proposed to be established along the eastern and western boundaries of the subject site.

These screening plantings will minimise any visual impact to the neighbouring properties.

The location of the inverter and substation has been selected to be in close proximity to the existing 22kV line. This will mean that the visual amenity impact is kept consistent with existing land uses.

The visual amenity impact of the solar farm on neighbouring dwellings is expected to be low primarily due to the terrain, separation distances to the dwellings, security fences and existing & proposed vegetation.

ELECTROMAGNETIC INTERFERENCE

The risk of EMI from PV systems is typically very low. This is validated by advice from the Australian Radiation Protection and Nuclear Safety Agency contained within the Victorian Solar Energy Facilities – Design and Development Guidelines July 2019:

“Electrical equipment produces electromagnetic radiation. Radiation produced by transformers and inverters is reduced through performance standards that apply to standard components.

The Australian Radiation Protection and Nuclear Safety Agency advises that the strength of this radiation will decrease with distance from the source, and it will become indistinguishable from background radiation within 50m of a high-voltage power line and within 5 to 10m of a substation. The design and layout of the facility should account for this information.”

This is further validated by the statement from American Federal Aviation Administration.

“Due to their low profiles, solar PV systems typically represent little risk of interfering with radar transmissions. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current are buried beneath the ground and away from any signal transmission.”

In light of the above, the risk posed by the facility is low-negligible. There are no sensitive receivers within close proximity to proposed major electrical infrastructure. The proposal complies with the relevant policy directives at Clause 53.13 and under the Victorian Solar Farm Guidelines in relation to EMI and no further assessment is required.

2.6 GLINT AND GLARE

A Glint and Glare Assessment has been prepared by YZ Consulting Pty Ltd and submitted with the Permit Application.

The Forge Solar Glare Analysis predicted that there would be no impact on any nearby dwellings, Calder Highway or the railway line to the north.

The nearest aerodrome to the subject site is the Charlton Airport located on the Charlton - St Arnaud Road approximately 7 kilometres from the solar farm boundary to the west. The facility will have no impact on the operation of the airport.

With minimal traffic using Biddlestones Road it is considered there will be no impact from glint or glare on traffic using this road.

2.7 NATURAL HAZARD MANAGEMENT

BUSHFIRE

The proposal accords with the relevant sections of the scheme, in particular, Clause 13.02-1S (Bushfire planning) in relation to managing fire risks. The CFA Guidelines for Renewable Energy Installations have also been considered and applied to the design. The site is within a Designated Bushfire Area under the Building Act 1993 however is not affected by any bushfire specific overlays.

The proposal has incorporated key fire safety design parameters from the CFA Guidelines:

- A 10m fire break will be maintained around the entire facility, allowing emergency access around the perimeter of the facility.
- At least 2 access points will be provided. A secondary access gate will be provided near main site facilities.
- A minimum 6m separation between panel banks is provided as per 6.1.1 of the CFA guidelines.
- Grass no longer than 100m will be maintained beneath the panels in accordance with 6.1.1.

Appropriate fire management, including emergency information, will be included in a Fire Management Plan for the project which would be expected to be a condition on any permit that may issue. This would include maintenance of grass beneath the panels and other ongoing obligations.

2.8 CUMULATIVE IMPACTS

There are currently no other solar energy facilities in the area that would result in a significant cumulative impact, either in terms of noise, visual impacts, electromagnetic impact, or cumulative impacts on agriculture in the area.

2.9 TRAFFIC AND TRANSPORT

A Traffic and Transport Assessment has been prepared by Impact Traffic Engineering Pty Ltd and submitted with the Permit Application.

Primary traffic route to access the subject site will from the Calder Highway onto Biddlestones Road.

All other impacts on the road network through construction and operational will be comfortably within the design capabilities and expected traffic volumes of the relevant road network, therefore acceptable and in accordance with the relevant sections of the Buloke Planning Scheme, and subject to compliance with any permit that may need to be gained.

The traffic and transport impacts of the operation and construction of the proposal will be comfortably accommodated by the existing road network, in accordance with Clause 18.02-3S Road System, Clause 21.06-4 Transport and the DELWP Solar Guidelines at Clause 53.13 Renewable Energy Facility.

CAR PARKING

The proposal will provide ample areas for on-site parking when the facility is in operation.

Detailed design has not yet been determined for car parking, however it is expected that during operation of the facility, all staff vehicles will be accommodated on-site within a vehicle parking area located adjacent to the site office/site facilities area that is shown adjacent in the south of the site. It is expected that a small number of staff will be present on the site some days in a week for maintenance and operational activities, as is typically the case with small utility scale solar facilities.

The proposal therefore provides an acceptable amount of car parking in accordance with Clause 52.06.

3 CONCLUSION

The proposed solar energy facility has been assessed against the relevant sections of the Buloke Planning Scheme, with particular reference to key provisions of Clause 35.07 (Farming Zone), Clause 52.13 (Renewable Energy Facility) and the *Solar Energy Facilities Design and Development Guideline*.

The balance of policies strongly supports the solar energy facility at the proposed location. The land is of low-agricultural significance and ecological impacts are negligible and acceptable.

Bushfire risk will be managed to an acceptably low level in accordance with CFA guidelines.

The proposed facility will have minimal impact on the amenity of the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference. Significant views including visual corridors and sightlines will not be impacted by the proposed solar farm.

The impact to local roads will be minimal due to the short construction period and limited construction workers on site, with ongoing impacts from operation of the facility being negligible.

It is submitted that the proposed solar energy facility is in accordance with the relevant policies and warrants the issue of a planning permit subject to conditions.

A handwritten signature in black ink, appearing to read "F.N. Brennan", is written over a faint circular stamp or watermark.

F.N. (Frank) Brennan PSM MPIA
Accredited Planning Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES