CHARLTON SOLAR & STORAGE PROJECT

Development Application to DEWLP

25 January 2022

Tetris Energy Pty Ltd

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OVERVIEW OF PROJECT

Tetris Energy Pty Ltd ('Tetris Energy') has identified an opportunity to develop an integrated solar PV and storage project on the land in the vicinity of the Charlton 22kV distribution line.

It is proposed to develop up to 4.98MW_{AC} solar PV generating facility which will generate an estimated 12,500 MWh of clean, renewable energy which will contribute to the supply for the Charlton region. Combining that with up to 4MW of Battery Storage will smooth the output and the network stability.

This is an exciting opportunity to showcase how cutting-edge distributed energy systems can provide low-cost electricity, improve network reliability and security, and create the opportunity for lower electricity prices.

This development application is seeking approval for the 4.98 MWAC solar and storage project and associated infrastructure. Following the introductory discussion with DEWLP on 22 October 2022, we are pleased to submit this Development Application for a solar PV and storage facility ("the Project") to be located at 126 Biddlestones Road Charlton VIC 3525.

This development application has been prepared by Tetris Energy Pty Ltd with the specialist planning input from Frank Brennan Consulting Services and a variety of specialist consultants.

Address	126 Biddlestones Road Charlton VIC 3525
Land description	▪ Lot 2 on Plan of Subdivision 403054F (belonging to Certificate of Title VOLUME 10295 FOLIO 770) ▪ Biddlestones Road Reserve ▪ Calder Highway Road Reserve
Permit Triggers	• Clause 19.01 Renewable Energy o To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met o Facilitate renewable energy development in appropriate locations • Clause 35.07 Farming Zone (FZ) o Buildings within 100 metres from a Category 1 road and 5 metres from a boundary (Schedule to FZ) • Clause 52.05 Signs o Business identification signage • Clause 53.13 Renewable Energy Facility (Other than Wind Energy Facility) o To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area
Proponent	Tetris Energy Pty Ltd
Local Government Area	Buloke Shire

STAKEHOLDER SUMMARY

Tetris Energy Pty Ltd – The team has delivered a number of renewable energy, innovative infrastructure, and agriculture projects. They will be responsible for navigating and funding it through all stages of the development including; design, planning, resource assessment, equipment procurement, and project financing. It will be also supported by other specialist consultants and engineers.

Retail – Once the detailed design is completed, the team will have a greater degree of confidence in the volume and price of the power that can be marketed. Tetris is in discussion with retailers that can offer a unique wholesale offering to customers.

Approvals – DEWLP will be the responsible planning authority for the project. The planning applications have been prepared and submitted by both Tetris Energy with the support of specialist planning consultant Frank Brennan Consulting Services and other subject matter experts.

Connection Agreement – Tetris Energy is actively progressing through Powercor's connection application process. This includes detailed system studies.

Land Lease – Barry and Deirdre Mckenzie are the landowners for Lot 2 PS403054, being the land contained in Certificate of Title Volume 10295 Folio 770. An application for subdivision will be lodged with the Buloke Shire to create a new lot for the proposed solar farm area. This land is currently used for grazing, cropping and has a small 299kW existing ground mount solar array.

EPC – Tetris Energy has been in discussions with several contractors for the project. Prior to construction, Tetris Energy will finalise a comprehensive procurement process for the solar and storage equipment. This is to ensure the project has the lowest cost of energy and the most suitable equipment for the site.

Fig 1. Example Solar PV Array – screw mounted

PRELIMINARY SITE DESIGN

Site selection

The project site selection included the following key assessment criteria:

- Located in close proximity to a viable connection point at the Charlton 22kV line;
- Flat land with favourable slope;
- Avoiding low lying land/land prone to flooding/inundation/riparian corridors;
- Located near local loads (quarry and agriculture)
- Able to achieve independent access to the site with good transport;
- Separated from existing residential/public areas;
- Favorable orientation to the north to maximise solar output; and
- Avoiding shading from near objects, for example, hills, trees and power poles.

Fig 2. Charlton 66kV and 22kV line

Plans

Designs have been undertaken to determine the suitability of the site. The site has been modelled as a 4.98MWAC facility using single axis tracking solar PV technology coupled with battery storage. A 4.98MWAC project was chosen as in an indicative size as it fits well with the current loading on the Charlton 22kV distribution line and generator licencing requirements. The new project will be independent of the existing 299kW ground mount solar PV array.

The Lease Area has more than sufficient land for 4.98MWac of solar PV, battery storage and associated connection infrastructure. During the design optimisation phase the configuration will be optimised based on resource, planning constraints, ground conditions and land use preference. The design is likely to include a component of battery storage equipment to optimise the reliability and security of the network.

A summary of the key Project specifications are detailed in the table below:

Table 1- Project Specifications

Site	Description
Technology	Single axis tracking Solar PV
Mounting	Piling / Screw
Size	4.98MW_{AC} (up to 1.4 DC/AC ratio)
Approximate Capacity Factor	28%
Expected Annual Generation	12,500 MWh
Battery Storage	4MW/8MWh

Tetris Energy has submitted a direct application into the Powercor 22kV distribution feeder. Following receipt of the final connection offer, the capacity and grid connection infrastructure may be adjusted to meet the Powercor requirements. The plans included as part of this application have been prepared with this in mind and include the flexibility.

As part of the final detailed study and design, the Project would be optimised which may result in some changes to the system capacity and preferred mounting technology. Estimated solar energy production data utilised solar irradiation data from the Australian Bureau of Meteorology. The baseline plant design includes single axis tracking as this should provide the most cost-effective proposal for the Project. Whilst a fixed axis design is less expensive to build and maintain, the tracking technology ensures a greater amount of electricity generation in the morning and evenings. This is particularly important for late summer afternoons when electricity prices are often higher; as a single axis tracking system will generate more power during this period of the day. The relatively high solar irradiation at the site results in more than enough increased generation from a single axis PV system to compensate for its somewhat higher costs.

Every solar PV system will very slowly lose efficiency over time due to gradual degradation of the PV modules. By utilising panels from reputable manufacturers, the risk of unexpectedly high degradation rates is very low and performance guarantees are available. The Proponent would procure PV modules from a supplier with a long term (25-year) design life and performance warranty.

SITE LAYOUT

Fig 3. Indicative layout of the solar farm and battery array

Fig 4. Subject lot and surrounding region

EXISTING LAND USE AND SITE CONDITIONS

Geography

The property is currently used for cropping and occasional grazing. The site is predominantly flat with drainage line to the north of the subject area.

The project site is not exposed to flooding or inundation.

The Howells Hill Scenic Reserve is located to the east of the subject area. To the south is the Boral quarry and the Charlton East Bushland Reserve.

Fig 5. Site photo showing the existing solar farm site are and the Howells Hill in the background

Geology

The soils can be defined as red sand over clay (Source: Barry McKenzie).

A geotechnical assessment will be carried out on the site to confirm the ground conditions prior to construction.

Ecology

Most of the property has been cleared for cropping and grazing purposes. There has been some native vegetation retained along the road reserve and along the Southern boundary.

All native vegetation has been avoided.

A flora and fauna assessment has been prepared by Okologie and is included in appendix 5.

Fig 6. Photo showing the proposed site are, existing vegetation screen and powerline.

Cultural Heritage

Charlton and the surrounding district was originally inhabited by the Jaara people, a native Aboriginal tribe. The local language group was the Dja Dja Wurrung. Also known as the Loddon River tribe, they occupied the watersheds of the Loddon and Avoca rivers. They roamed over a vast area including the Buckrabanyule hills, Mount Wycheproof and Lake Buloke, travelling from one water supply to the next. The group of low hills just west of where Charlton is now situated was once a semi permanent aboriginal camp site. The aborigines named the area Youanduk, meaning a basin in a rock, as there were a number of rock depressions on the hillsides providing a reasonably good water supply (source: https://www.charlton.vic.au/about-charlton/).

Based on desktop survey, there are no areas classified as an area of cultural heritage sensitivity (refer extract from VicPlan below). 'Areas of cultural heritage sensitivity' are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places. The nearest location is long the Yeungroon creek about 3km west towards the current township of Charlton.

The potential for undiscovered Aboriginal heritage sites to occur within the proposed development footprint is considered low due to the land being previously disturbed through cropping activities, and a lack of environmental features that would suggest Aboriginal cultural sensitivity. Although the project is unlikely to impact Aboriginal or European heritage, an unexpected finds protocol would be implemented during construction in the event that heritage items are discovered.

European history dates in the region dates back to around 1830’s during exploratory missions western Victoria. The area is now well renowned for agriculture.

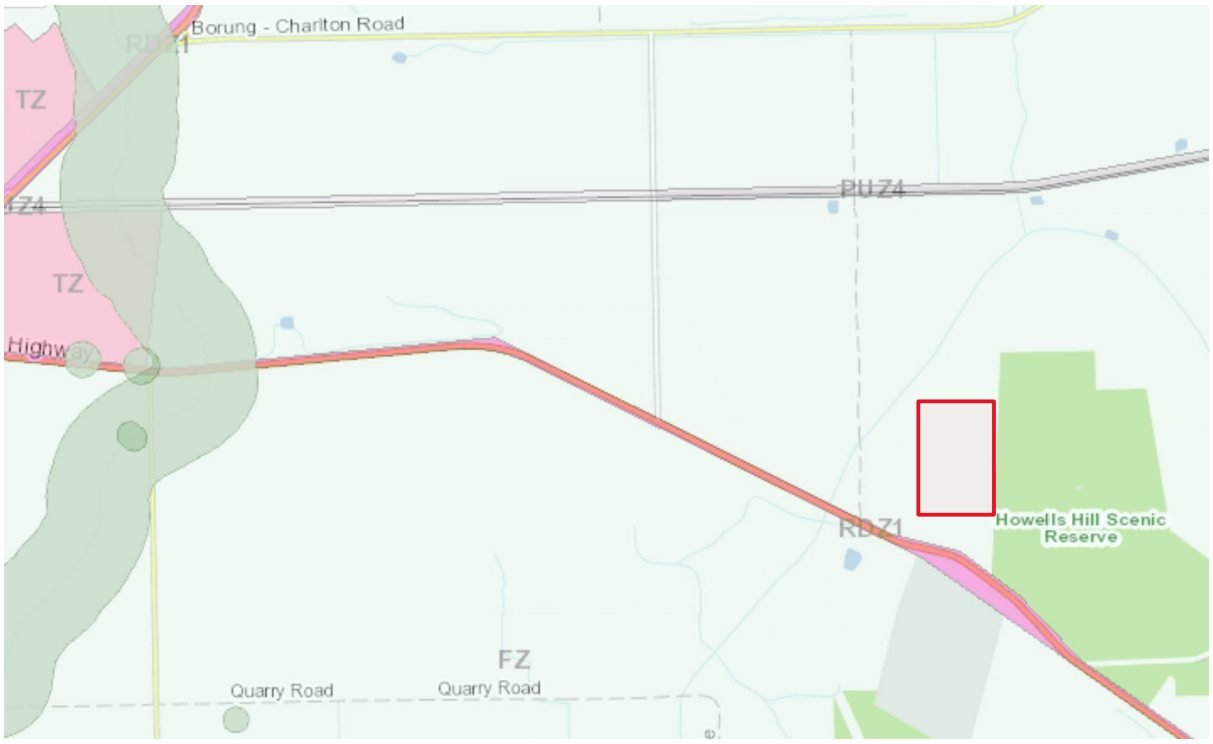


Fig 7. Areas of Aboriginal Cultural Heritage Sensitivity (Dark green) (Source: VicPlan)

Visual Amenity

The property is a typical of commercial farming properties in the area. It is situated on Northern side of the Calder Highway with a vista of cleared paddocks, roadside native vegetation, and Howells Hill. There are very few unassociated residential dwellings in vicinity of the project area. The inclusion of the solar PV array is not expected to adversely impact on the visual amenity of the area. A separate glint and glare assessment has been undertaken (appendix 7).

Below are some example views of solar farms during both operating and construction.

Fig 8. Example solar farm under construction

Fig 9. Example view of operating solar farm (Mannum)

The site has extensive existing native vegetation screening along all boundaries. The southern boundary has around 120m of mixed native trees before reaching the Calder Hwy road reserve. The eastern boundary is the Howells Hill Scenic Reserve which is vegetated and is a natural screen to all properties to the east. North of the subject site is associate farm land

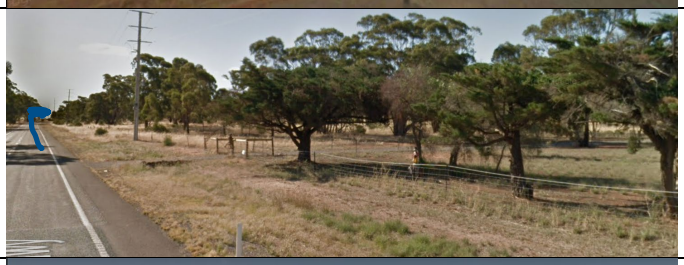
and it includes the Wychetella channel that is vegetated along the banks. Biddlestones road reserve runs along the western boundary and has existing trees and shrubs. The location of the inverter and substation has been selected to be in close proximity to the existing 22kV line. This will mean that the visual amenity impact is kept consistent with existing land uses. The existing solar farm has been well received and there have been no complaints.

Fig 10. Existing vegetation screening profile – looking NW from the Calder Hwy

The visual amenity impact of the solar farm on neighbouring dwellings is expected to be negligible. Below is a map showing the location and distance from the dwellings to the array. Due to the terrain, distance to houses, fences and existing vegetation – it is unlikely that many dwellings will have much visibility of the array.

We undertook a site inspection to understand key public and private realm views of the subject site. Views considered most important are those from the nearest dwellings and also the visibility of the solar array from Calder Hwy and to the west and Howells Hill Scenic Reserve to the east. We have included some images taken from the closest public viewpoint to dwellings 1, 2, 3, 4 and also from both the Calder Hwy and the railway. We would have conducted this from the actual dwellings but was limited due to COVID 19 restrictions.

Fig 11. Location and distances to nearest dwellings

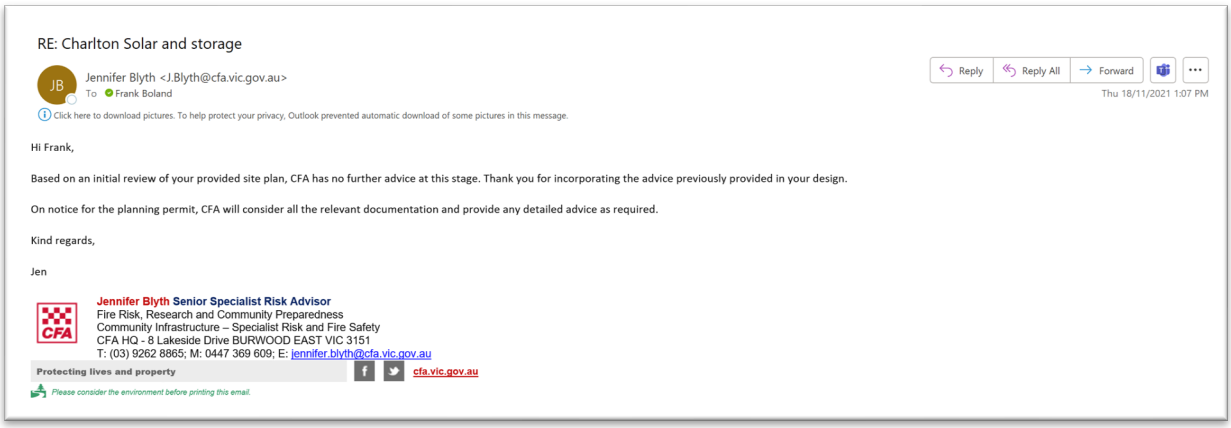
Dwelling	Distance	View point photo	Comments
1	1420m		Due to the existing vegetation and distance it will be difficult to see the solar array from the dwelling. Impact is low.
2	1210m		From this dwelling there is a lot of native bushland and Howells Hill between the solar array and dwelling. Impact is low.
3	2740m		Given the amount of existing native bushland and trees, and at 2740m – it will be difficult to view the solar farm area.
4	2900m		There are several different vegetation clusters that will screen the array from this dwelling and is unlikely to be visible. Impact is low.

Howells Hill Scenic Reserve is located adjacent to the subject land and the summit is around 450m from the array. This reserve is managed by Parks Victoria. At the time of preparing this application, there were no details about the reserve on their website.

Operational considerations

Dust – during construction the creation of the access tracks and piling may create some dust. The construction management plan that will be written by the selected contractor will need to have an active management plan to minimize dust impacts during construction. Once the solar farm is established and operational, it is expected that the amount of dust produced will be negligible and less than the nearby cropping activities. Dust also impacts the performance of the panels; therefore, maintenance staff will have an incentive to minimise.

Fire – The applicant has committed to writing a bush fire management plan. This will involve consultation between the site owner, contractor and local country fire service. A fire break has been included around the perimeter of the project in the 10m setback. Consultation occurred with the CFA in late November 2021 (see below).



RE: Charlton Solar and storage

JB Jennifer Blyth <J.Blyth@cfa.vic.gov.au>
To Frank Boland

Reply | Reply All | Forward

Thu 18/11/2021 1:07 PM

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Hi Frank,

Based on an initial review of your provided site plan, CFA has no further advice at this stage. Thank you for incorporating the advice previously provided in your design.

On notice for the planning permit, CFA will consider all the relevant documentation and provide any detailed advice as required.

Kind regards,

Jen

Jennifer Blyth Senior Specialist Risk Advisor
Fire Risk, Research and Community Preparedness
Community Infrastructure – Specialist Risk and Fire Safety
CFA HQ - 8 Lakeside Drive BURWOOD EAST VIC 3151
T: (03) 9262 8865; M: 0447 369 609; E: jennifer.blyth@cfa.vic.gov.au

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Please consider the environment before printing this email.

Fig 12. Copy of consultation email with CFA 18 November 2021.

A 300 KL static water supply tank will also be installed for fire suppression if the battery is installed, 45 KL if they are not installed. The below CFA recommendations CFA Guidelines for renewable energy installations (CFA 2019) will also be adopted.

- *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.*

Glint and Glare – The solar pv array is designed to absorb as much solar irradiance as possible and convert to electricity. As a result, the glare from the panels will be negligible. With the 150m buffer from Biddlescomb road, ~190m from Calder Hwy and the existing and proposed vegetation landscaping buffer it will further reduce any potential visual or glare impacts. The glint and glare was also considered for the railway to the north which was predicted to be nil. A supporting glint and glare assessment is provided in appendix 7 and prepared by YZ Consulting Pty Ltd.

Lightning – All of the equipment on the site has been designed to ground any lightning that directly hits the equipment. The Powercor 22kV network and nearby Howells Hill telecommunications will be the highest equipment above ground, which is also designed to minimize any impacts from lightning.

Noise – the site has been selected due to the proximity away from houses. The nearest house is around 1.2km from the solar array. During construction phase there will be some noise associated with access track compression, drilling, and piling. These works will be contained to the construction hours and outlined in detail in the EMP. Once operational, the sources for noise from the project are negligible. The inverter, transformer, and battery, and will all have small cooling fans. The trackers are mechanical and move every ~15 minutes, this is a very subtle adjustment and not audible from a distance. A noise assessment has been provided by ADP Engineering in appendix 6.

Agricultural Impact – The site is currently used for cropping and some grazing. Given the small footprint of the solar farm, the conclusion is that there will be negligible impact on agricultural activities. The project will be design to allow continued grazing of sheep amongst the array.

Complaints management – prior to construction, all neighbours will be consulted with and advised of the works plan. A designated email address and phone number will be provided for people to lodge any complaints. The site owner and contractor will co-ordinate a practical response to any complaints.

Hydrology – the site has limited flood risk and is outside of the flood overlay areas (see below). The Wychetella channel is located to the north of the site. This waterway has controlled flows so is not prone to any flooding. The solar arrays will be spaced sufficiently so that any run off water can be absorbed into the ground.

Fig 13. Flood overlay of surrounding region (source: VicPlan)

PLANNING CONTEXT

A specialist planning report has been prepared by Frank Brennan Consulting Services – please see **appendix two**.

TECHNOLOGY OVERVIEW

The Project's design will be similar to other approved solar projects within Victoria and will be sited to ensure minimal environmental impacts, in keeping with the sustainable nature of the Project. The process to select this proposed location for the PV and storage facility has been ongoing with landowners and engineers and has been carefully undertaken to ensure the highest design standards and location for the Project, as well as minimal impact to be imposed on the surrounding community.

Accordingly, the Project has been designed so as to minimise the impact on the landscape and surrounding environs as much as possible, with respect to a range of factors such as: the existing environment; agricultural land and activities occurring on-site and off-site; proximity to existing electricity infrastructure; and visual impact considerations. The Project comprises of a number of interlinked and integral components for the operation of the equipment and generation of electricity from solar radiation.

The proposed solar and storage project will comprise five principal parts being the photovoltaic (PV) array and tracking system, the inverters, battery energy storage, the connecting infrastructure (22 kV underground/overhead transmission line, transformer), switchboard and Powercor interface) into the power distribution network, site access roads, cabling, fencing,

and associated minor ancillary infrastructure. Tetris Energy is seeking development consent for all the above-mentioned infrastructure.

PV Modules and Arrays

Each PV module is made up of a number of PV cells sealed in an environmentally friendly protective laminate which converts sunlight into electricity and are seen as the building blocks of PV systems. The panels may also be bi-facial with cells on either side of the module. A number of modules (one or more - pending on the design) make up a panel which are prewired field installed units. A number of these panels are joined together to form an array, which is a complete power generating unit.
The arrays are connected to a single axis tracking system. Typically, these arrays are arranged in rows normally in a north/south direction with access tracks between the rows for maintenance purposes and to avoid shading issues.

Fig 14. Example of a Single Axis Solar PV Array (Source: Tetris, Mannum solar farm)

Tracking System

A single axis tracking system is proposed (will be confirmed during detailed design) which rotates the arrays from east to west each day to ensure optimal exposure to the sun. The tracking system will be designed and constructed in accordance with the Australian Standards and will have a maximum height of close to 3m metres (although the actual height will be closer to 2.8m). An elevation drawing is included in appendix.

Inverters

The energy generated by the PV modules will be converted from direct current (DC) to alternating current (AC) energy by the inverters and increased to medium voltage via integrated transformers. The inverters and transformers will be housed either in standard shipping containers, in small buildings, or in an outdoor “skid” configuration. The exact type and number of inverters that will be required for the Project will not be known until the detailed design phase, which will determine the electricity generating capacity of the facility. Due to the size of the lot and their location throughout the Project Area between the PV modules ensure any visual impacts are likely to be low. Colour will be similar to Fig.13.a. and Fig.13.b.

Fig 15.a. Example of a proposed inverter and transformer on a skid

Fig 15.b. Example of a proposed string inverter (1m H x 1m W x 0.5m D)

Grid Connection

It is expected that the Project will connect directly into the 22kV Powercor distribution line via a new interpole onto a pole mounted load switch. Similar to the pole shown in figure 14. In order to facilitate this connection, there will be a small switchyard within the Project Area which is likely to be constructed adjacent to the existing distribution line. This arrangement will include the 22kV underground cable, step up transformers, switchboard, metering cubicle, communications, and other minor electrical works required by Powercor to connect the solar farm. The size and design of this will depend on the ultimate generating capacity and grid connection arrangements.

The connection works may also require some infrastructure (such as fibre optic cable) running back into the existing substation. This work will be undertaken by Powercor.

Fig 16. Example connection point and cable trench

Fig 17. Local network infrastructure

Battery Storage

The Project will make provision for battery energy storage for this project. While the specific design and type of storage will be finalised prior to construction (due to the rapid changes in technology), these are typically skid mounted, in small containers, or steel clad buildings. The base case for this project is 1 x Tesla Megapack. This allows for the storage of power during peak generating times (optimal sunlight conditions) for use later when generating capacity is low or at night. This improves the efficiency and reliability of the facility. They can also be used to provide network support for the local grid.

The technology being considered here is similar to that of being installed by Tesla at Hornsdale wind farm in South Australia at the moment. Dimensions will be approx. 3m high, 16m long, and 9m wide. Most likely colour is mat white. The cells used are most likely a lithium ion based product. Each of the battery modules weigh 19,200kg (out of the 30,500 kg total maximum mass) – there will be a total of three of these modules.

Fig 18. Example Battery Storage System (source: Tesla)

Site office and maintenance

The Project may require a site office during the construction and operational phases. This is to house all of the construction plans and administrative matters. There may also be a small shed or container for warehousing the maintenance tools and spare parts. Given the remote location it will be important to have these spares in close proximity to minimise outages.

Fig 19. Example construction and operational site office – approx. 6m by 2.5m

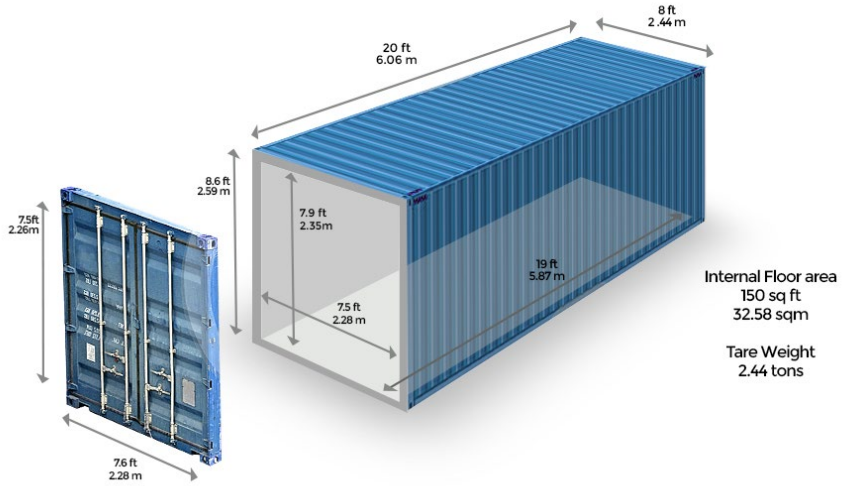

Fig 20. Example shipping container for spare parts storage

Utilities

There is currently water or sewerage infrastructure adjacent to the project area however the project is not intending to seek a connection to these initially. Rainwater or carted water may be collected and stored via water tanks and used on-site for maintenance purposes. Portable toilets will be used and maintained onsite.

A 300 KL static water supply tank will also be installed at the entrance for fire suppression if the battery storage is installed, otherwise it will be a 45kL tank. To be located at the site entrance – see appendix one.

Road Access and Parking

A traffic impact assessment has been prepared by Impact Engineering – see appendix four. Site access is shown on the site layout plan. Access to the site will follow the established access route down Biddlestones Road which comes off the Calder Hwy. The section of Biddlestones Road will be upgraded to an all weather surface from the site access point to the Calder Hwy. There will be a second emergency access if the battery is installed which is a recommendation from the CFA.

Fig 21. Aerial image showing access into the solar farm site


Fig 22. Southern end of Bildlestone Road and intersection with Calder Hwy.

Fig 23. Boral Quarry entrance opposite the intersection with Biddlestones Road.

Fig 24. Example road base material that will be used for the solar farm access and tracks (source: Mannum Solar farm)

Site parking will be approximately 50m from the site entrance. This will be adjacent to the connection infrastructure and storage container.

Fencing

The facility will be fenced for security purposes. The fencing plan can be seen in the full site plan.

Fig 25. Typical solar farm perimeter fence (Approx. 2.3m high) source: Tetris Energy, Mannum Solar Farm

Signage

The facility will include signage at the entrance gate that includes project details, site contact, emergency details and safety considerations. It will be similar to the below signage.

Fig 26. Typical solar farm signage

Expected Traffic Volumes

Construction Phase Overview

Project construction is expected to commence in Q3-2022 and take approximately 2 to 3 months. Peak construction is expected to occur within second and third months. During the peak construction period approximately 30 staff will work on-site.

A total of up to 30 additional daily vehicle movements are expected during peak construction activities (5 heavy vehicles & 25 light vehicles).

It is important to note that after construction of the project is completed, the access will not be regularly utilised. It is understood that the gate will be maintained to restrict vehicular access and control traffic.

Operations Phase Overview

The proposed solar farm will operate seven (7) days per week, 365 days per year.

Up to two (2) vehicle movements are expected with routine maintenance during operations. There will also be, on occasion some additional movements associated with more thorough maintenance (to be taking place on a 2 and 3 yearly basis, i.e. transformer testing).

Fig 27. Typical operation and maintenance vehicle servicing the inverter

Site Works

Management Plans

Prior to construction, Charlton Solar Farm will provide the following plans:

- Construction Environmental Management Plan
- Bushfire fire prevention and Management Plan

Construction Phase Overview

The Charlton Solar Farm will be broken up into key phases:

- Site mobilisation and the preparation of civil/mechanical works;
- Electrical installation of the array including DC, AC, battery and medium voltage (MV) infrastructure;
- Grid interconnection activities;
- Installation commissioning, usually involving cold, warm and hot commissioning stages;
- Demobilisation and site restoration; and
- Landscaping.

Construction hours will be from 7am to 6pm, Monday to Saturday. Once operational the plant will be monitored remotely 24/7 365 days a year. Generation will only occur during sunlight hours but the battery and network support equipment may run at other times of the day.

Construction Activities

The Charlton Solar Farm will undergo the following construction activities:

- Early works including identification of any existing services;
- Permits being granted prior to construction beginning;
- Site preparation prior to erection of site fences;
- Site earthworks including grading, drainage, trenching, piling and road construction;
- Material deliveries, including tracker components, solar modules, electrical cables, concrete deliveries, electrical switchgear and site buildings, including permanent infrastructure;
- Installation of the tracking piers and array module mounting structures;
- Module assembly and wiring of string cabling to DC combiner boxes;
- Electrical distribution wiring, buried and in conduits;
- Installation of electrical infrastructure foundations;
- Installation of electrical infrastructure to the foundations;
- Fit-off of all electricals to allow commissioning activities;
- DNSP to erect new assets for interconnection;
- Construction of interconnection assets owned by Tetris;
- Grid connection and commissioning activities;
- Site remediation and demobilisation, including landscaping.

Construction Footprints

There are several activities to be undertaken at Charlton which will require some form of earthworks and they include:

- Upgrade of the road base along Biddlestones Road to ensure it is all-weather.
- Entry to site access to be levelled and road base (crusher dust/gravel) to be applied.
- Some potential light clearing of exotic vegetation to enable cabling to the existing services (telecommunications and water pipes etc),
- The preparation and construction of temporary and permanent access roads and laydown areas along with the compound;
- Foundation works for the electrical infrastructure;
- Trenches for electrical distribution and earth grading rings for the MV equipment.

Restoration

There will be site remedial works to be performed at the end of the construction phase, prior to the demobilisation phase. These will include:

- Any plantings required for screening purposes;
- Returning all areas disturbed by construction to former or better environmental health, where practicable.

Decommissioning

The project has a design life of 30-35 years. At the end of this period, the project will either be retrofitted with a newer system or decommissioned. A new system may require new planning approvals and lease amendment.

Under the registered lease agreement with the landowner, the tenant (Proponent) has the legal obligation to decommission the project and rehabilitate the land back to pasture.

Contribution to the local economy

The development of the Charlton Solar and Storage project will contribute to the local community through multiple channels. Below are some of the ways in which the project will benefit the region:

- Employment and upskilling opportunities during construction and operation
- Leading project with combined technologies. Charlton can pioneer these types of projects and gain valuable market exposure.
- Energy reliability and security for Buloke region.
- Option to aggregate loads to negotiate lower power costs through project offtake discussions
- Possibility to replicate on a smaller scale for diesel reliant agriculture loads
- Potential tourism benefit

Appendix One – Site Layout Plan

Appendix Two – Planning Report

Appendix Three – Site Elevation Plans and Titles

Appendix Four – Traffic Impact Assessment

Appendix Five – Flora and Fauna report

Appendix Six – Acoustic Assessment

Appendix Seven – Glint and Glare report