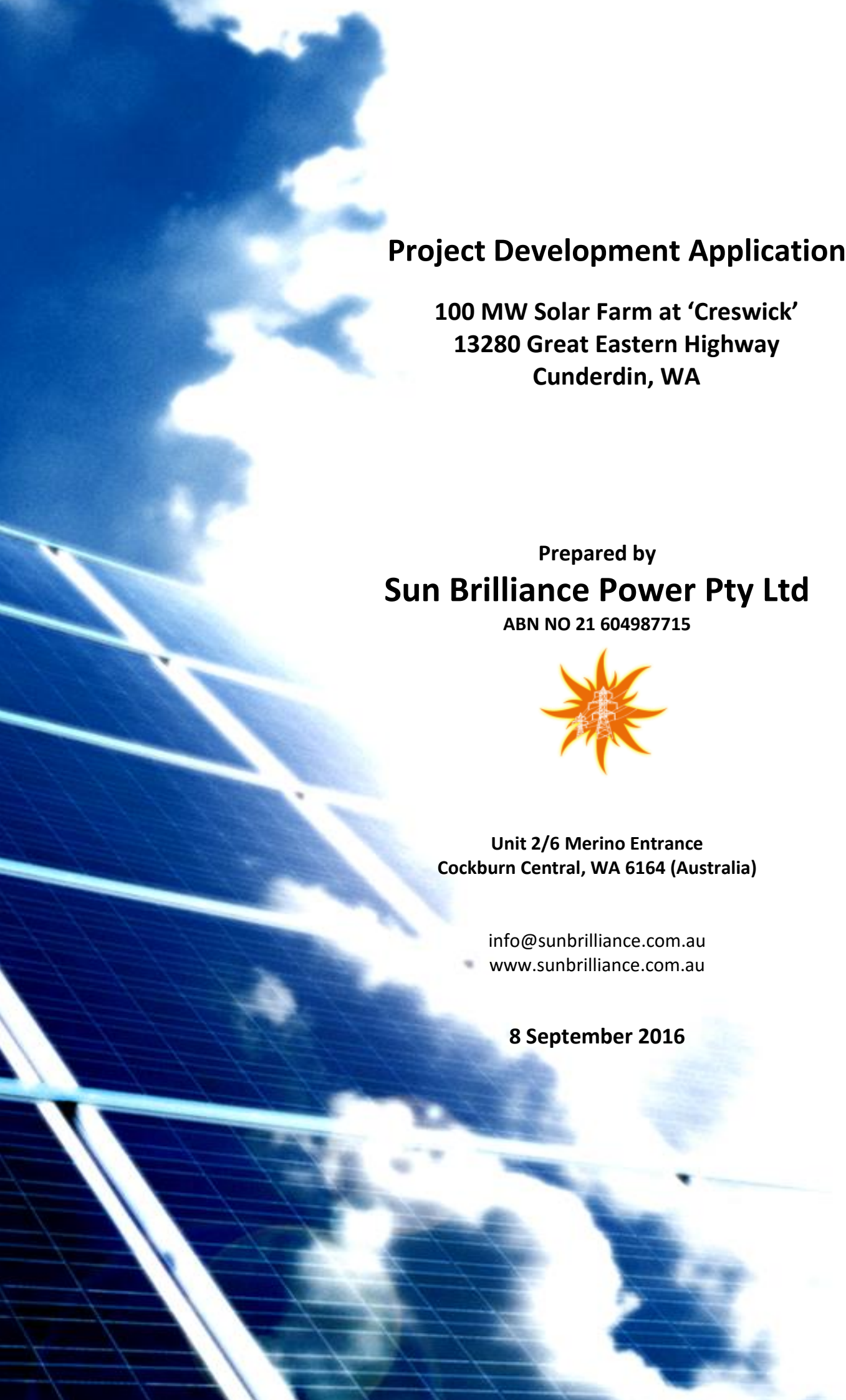

# Project Development Application

## 100 MW Solar Farm at 'Creswick'
## 13280 Great Eastern Highway
## Cunderdin, WA

**Prepared by**


## Sun Brilliance Power Pty Ltd

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## 1. PURPOSE OF THE APPLICATION

The purpose of this application is to seek approval from the Shire of Cunderdin and the Department of Planning for a proposed 100 MW solar photovoltaic power plant at 'Creswick', 13280 Great Eastern Highway, Cunderdin, Western Australia (refer attachment) situated within the Shire of Cunderdin.

### 1.1 Background

The project is being developed by Sun Brilliance Group (SBG) of Companies which operates in Australia in the clean technology sector and has its head office in Perth, Western Australia. SBG is led by Solar Power industry pioneer, Dr Dilawar Singh (Chairman and CEO) together with business partners Prof Ray Wills, internationally recognised as one of the Top 100 Global Leaders in Sustainability, and Kalwant Dhillon an experienced Chief Financial Officer (CFO) with an MBA degree from the University of Western Australia and a CPA Fellow member.

SBG operates in Australia through Sun Brilliance Power Pty Ltd and in India through its subsidiary, Sun Brilliance Energy (India) Pvt Ltd.

### 1.2 Sun Brilliance – Solar Power Project Developer

Sun Brilliance Group main focus is on Large-Scale Solar Projects Development as an

Independent Power Producer (IPP) and Engineering, Procurement and Construction (EPC) services.

## 2. SOLAR PHOTOVOLTAIC TECHNOLOGY & SOLAR FARM

### 2.1 Photovoltaic (PV) Technology

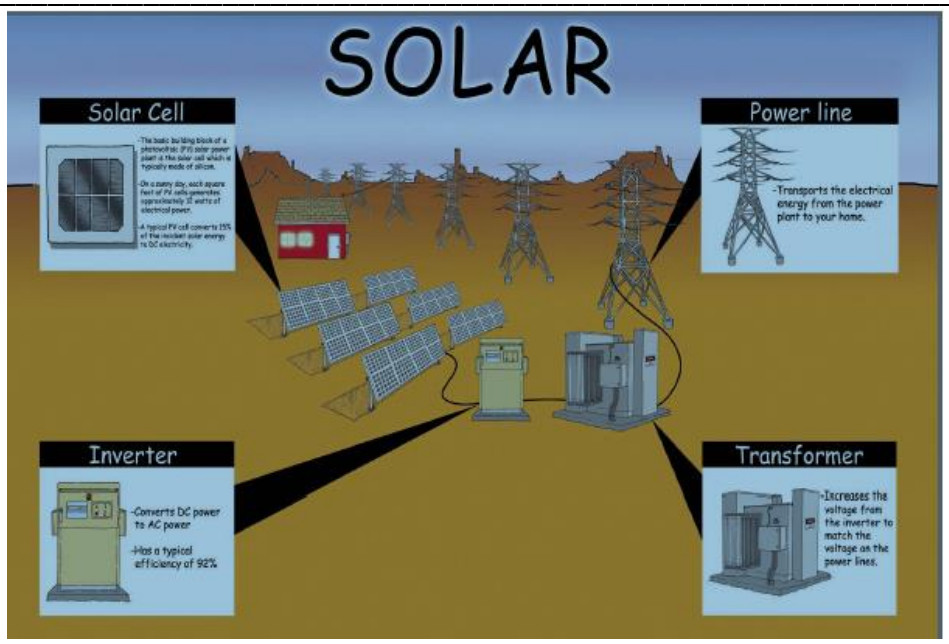
PV stands for photovoltaic which is derived from two words: photo meaning light and voltaic or volt which is the unit used to measure electric potential. PV solar panels create power by converting sunlight into electricity — producing clean energy.

A PV cell or solar cell is the semiconductor device that converts sunlight into electricity. These cells are combined to form panels which, in turn, are combined to create what are called arrays — the solar generation systems which connect to the energy grid. The efficiency of each solar panel is measured by its ability to absorb light particles called photons. The more photons that are absorbed, the more efficient the panel is at converting light into electricity.

When photons strike the solar cells contained in a solar panel, they can be absorbed, or pass through the panel. When photons are absorbed, they have the energy to knock electrons loose, which flow in one direction within the panel and exit through connecting wires as solar electricity, ultimately providing power.

### 2.2 Solar Farm

A photovoltaic power station, also known as a solar farm, is a large-scale photovoltaic system (PV system) designed for the supply of merchant power into the electricity grid. They are differentiated from most building-mounted and other decentralised solar power applications because they supply power at the utility level, rather than to a local user or users. The nameplate capacity of a photovoltaic power stations is rated in megawatt-peak (MWp), which refers to the solar array's DC power output. As of 2016, the world's largest operating photovoltaic power stations have capacities of close to 600 megawatts and projects up to 1,000 MW are planned.



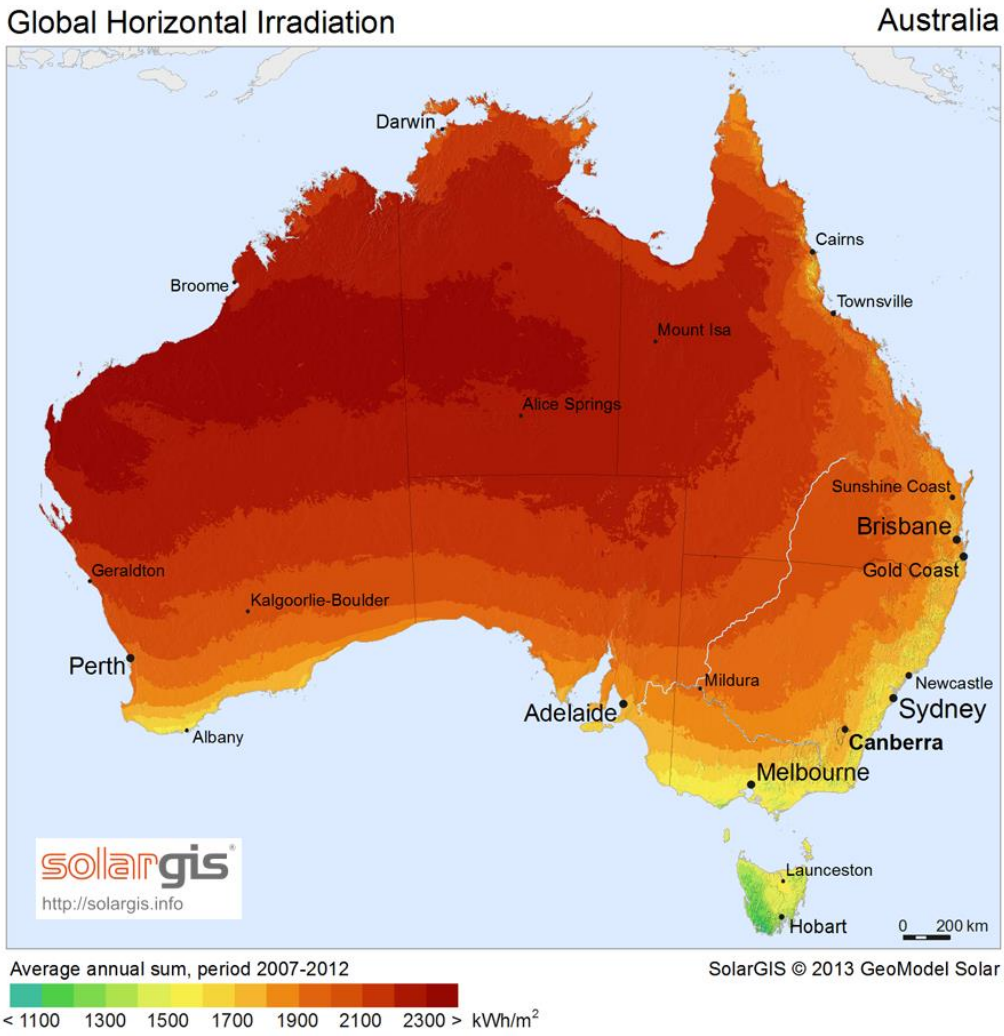

At the end of 2016, Australia had more than 20 operational solar projects larger than 1 MW in size. At the moment, the biggest operating large-scale solar PV plant is the 102 megawatt (MW) Nyngan facility in NSW which was officially opened in 2015. The other two large-scale solar farms are of 53 MW Broken Hill plant, developed by AGL and 56 MW Moree First Solar in New South Wales.

Western Australia has two PV solar farms of 10 MW Greenough River developed by Synergy and 10.6 MW Sandfire Mine developed by DeGrussa Copper-Gold Mine.

Australia is the ideal country for solar power given relatively high retail electricity prices and growing concerns about greenhouse gas emissions.

The combination of Australia's dry climate and latitude give it a high benefits and potential for solar energy production. Most of the Australian continent receives in excess of 4 kWh per square metre per day of insolation during winter months, with a region in the north exceeding 6 kWh/day, which make the solar power generation commercially viable.

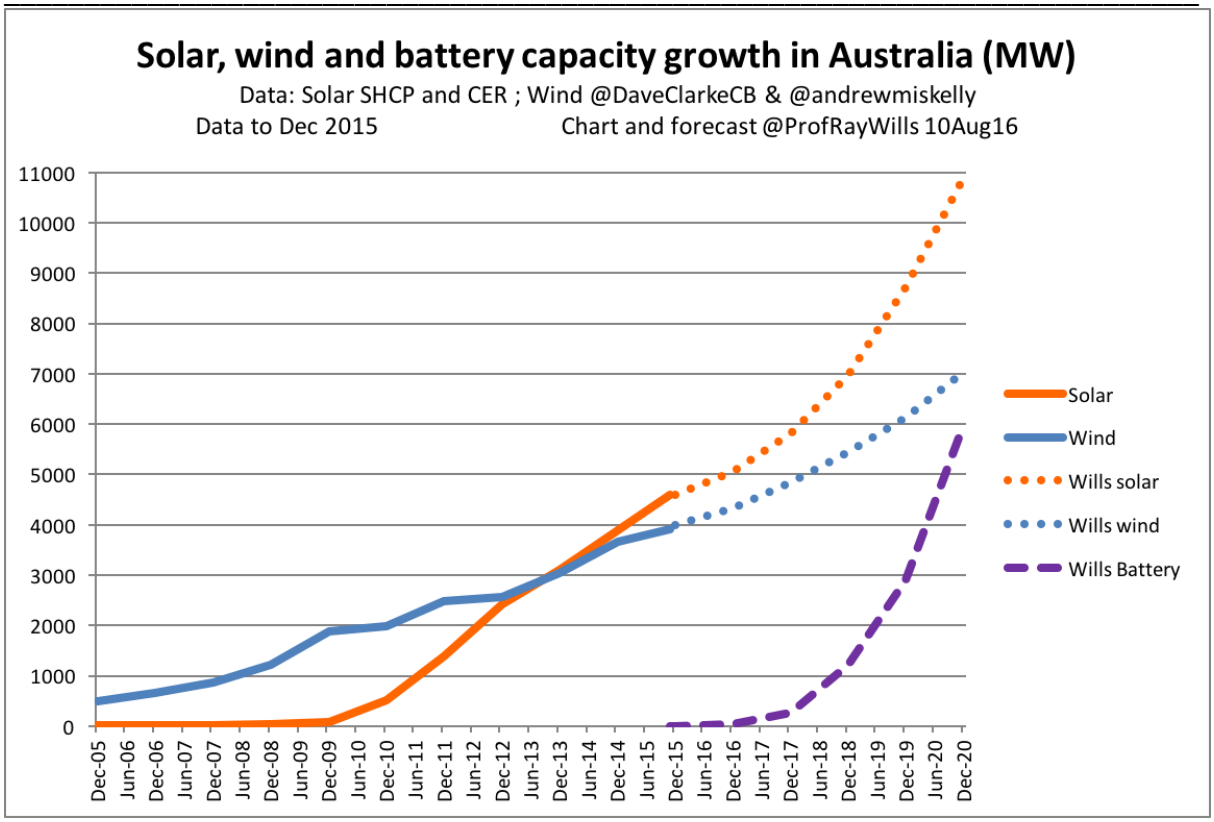
Australia's insolation greatly exceeds the average values in Europe, Russia, and most of North America.




**2.3 Solar Energy in Australia**

Solar Energy has become an integral part of energy policy in Australia.

Solar PV became Australia's number one source of renewable energy in 2016, passing 5 GW of installed capacity, overtaking wind's 4 GW.




### 2.4 Renewable Energy Targets

Australia's Renewable Energy Target (RET) is set at 33 TWh by 2020. New renewable energy capacity of 6 GW must be installed by 2020 to meet this target, and it is anticipated the majority of capacity will be Solar Power plants.

### 2.5 The Paris Climate Agreement

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal.

The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C. The agreement is due to enter into force in 2020. Australia has signed the Paris Agreement on Climate Change, joining more than 170 countries in their commitment to cutting greenhouse gas emissions. The Australian government would seek to ratify the Paris Agreement on climate change by the end of the year. It has set a 2030 emissions reduction target of 26 to 28 per cent below 2005 levels.

## 3. SITE DESCRIPTION

### 3.1 Land and Location

Sun Brilliance Power Pty Ltd, through Sun Brilliance Solar One Pty Ltd, has purchased 165.5 ha of land in the Wheatbelt region at 13280 Great Eastern Highway ('Creswick', Lot 801,

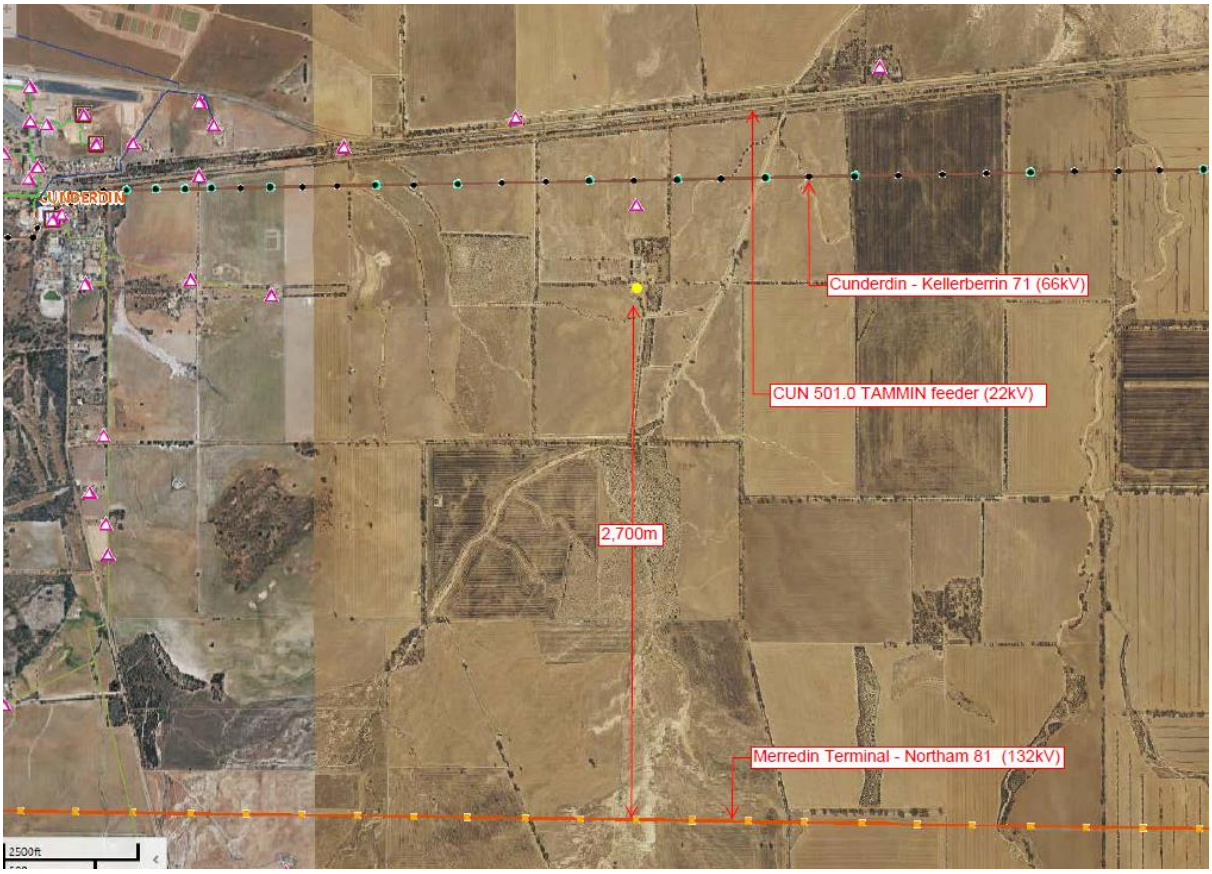
Deposited Plan 73669) in Cunderdin, 158 km east of Perth. Cunderdin was selected as the location for the Solar Farm in consultation and collaboration with Western Power to complement their existing source of power and allow for timely grid connection assessment. This is part of Sun Brilliance's broader plans to roll-out a number of Solar Farms across the Wheatbelt.


**3.2 Zoning of Land**

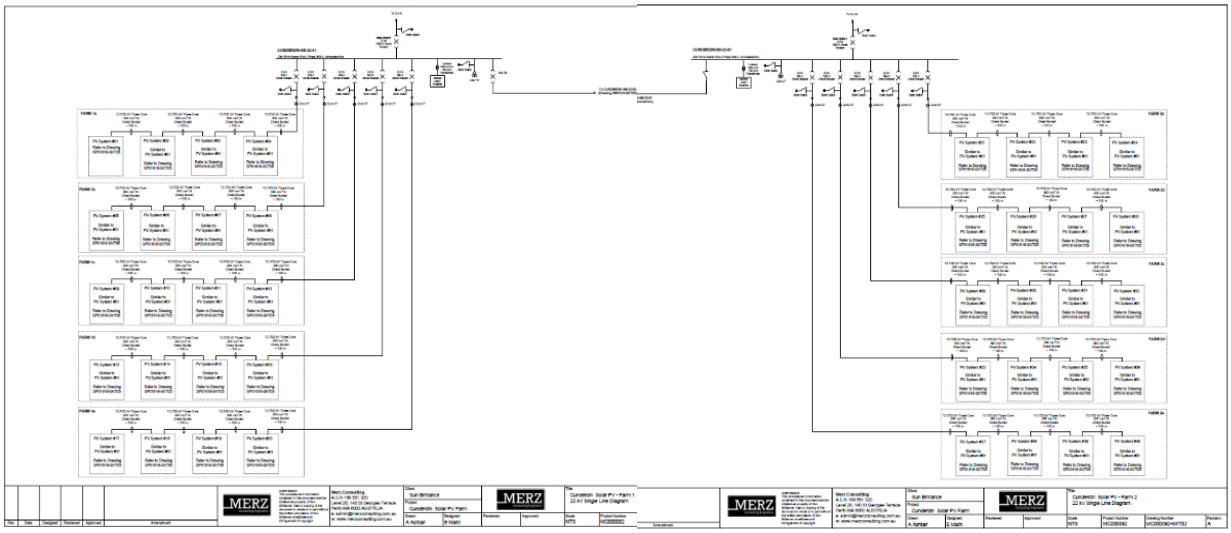
The land is zoned 'Farming", and is flat, mostly cleared of vegetation, and is highly suitable for ancillary use as a solar farm. The project will have minimal visual amenity impact on neighbouring properties. It is accessible from Great Eastern Highway as well as Fiergert Road to the south of the property.

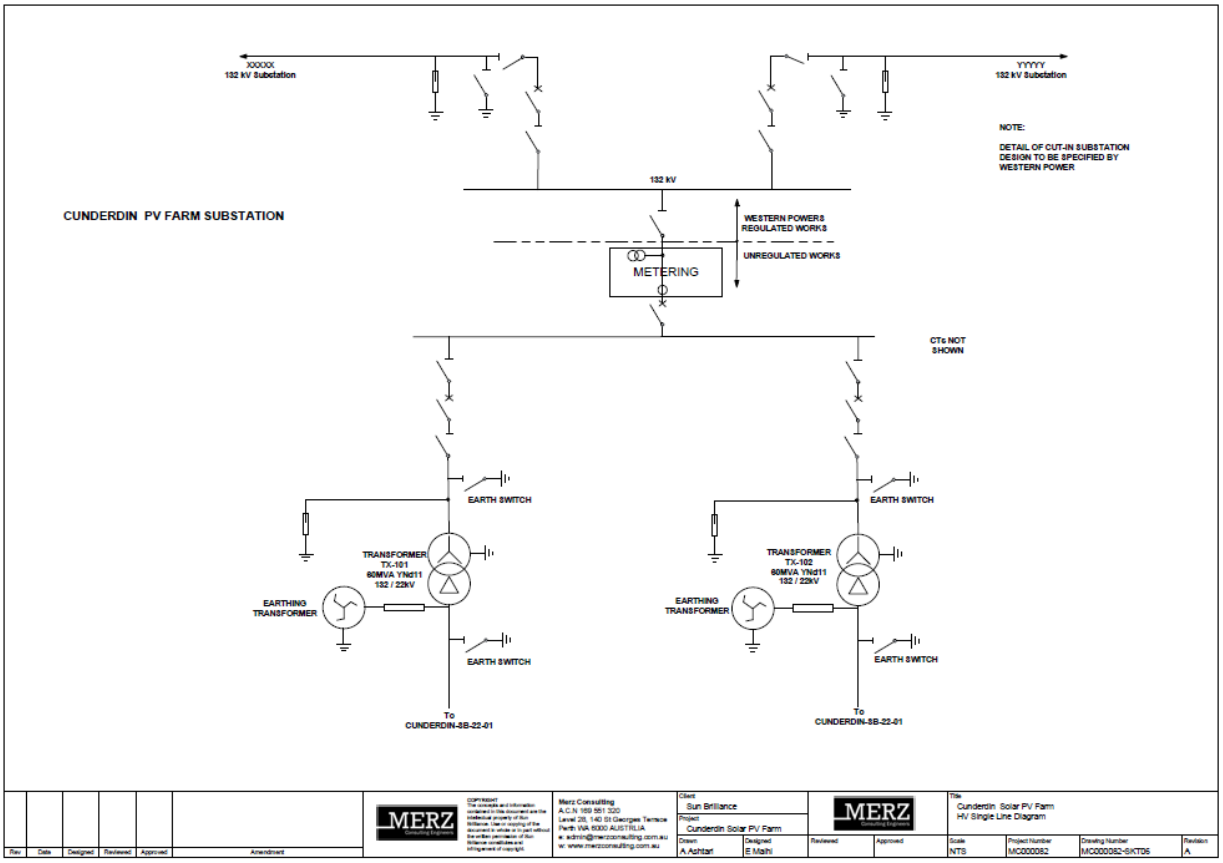
### 3.3 Physical Connection

The 165.5 ha land is flat and is adequate to host 100 MW Solar Project. The 132 kV powerline is running 2.5km south of the property where the grid connection will be made in conjunction with Western Power.




The design and engineering has been conducted by our Consultants, Merz Consulting, in relation to the "Grid-Connection" application to Western Power which was submitted in August, 2016.






The Project Site was selected because all the key factors required for an efficient solar project development and operation were present at the Site, including:

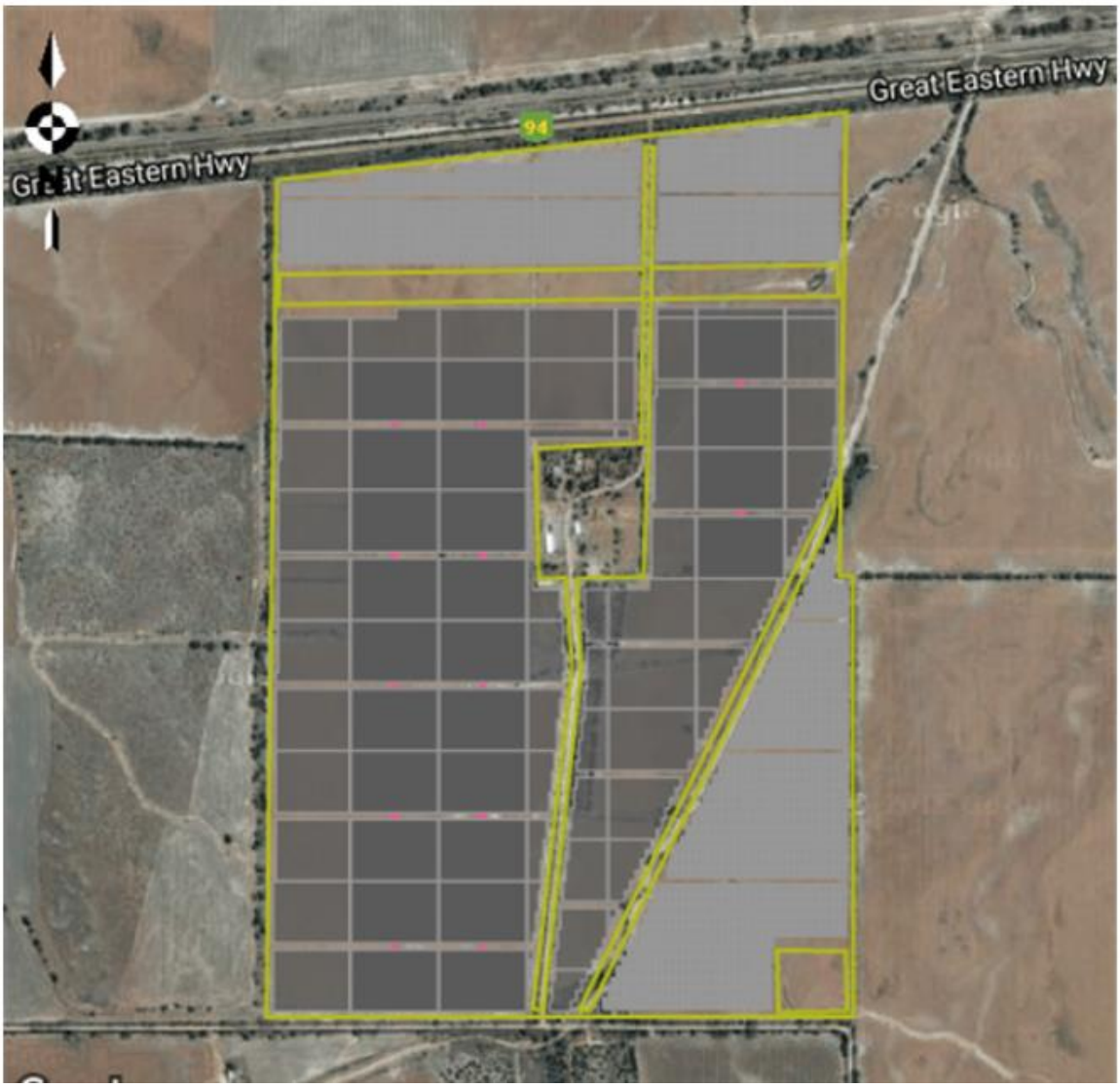
- proximity to the 132 KV line for the Grid Connection to allow for a low-cost connection to the Western Power distribution network.
- high levels of solar radiation, similar to Perth, through the year
- the land is flat, and has been almost entirely cleared for farming purpose
- the Site is away from residential areas
- the Site is on a major highway which assists in the logistics for the building of the Solar Farm Installation.

### 3.4 Brief Description of the Solar Farm Installation

The Solar Farm will be built mainly on the cleared agricultural land and will utilize approximately 140ha of land.

### 3.5 The Project at a Glance

| | | |
|---|---|---|
| 1 | Project Site | 13280 Great Eastern Hwy Cunderdin, WA |
| 2 | Type of System | Single Axis Tracking Solar Photovoltaic System |
| 3 | Type of PV Modules Considered in this offer | Multicrystalline/Thin Film |
| 4 | System Size | 100 MW |
| 5 | Solar Panels & Inverters | 312,500 x 320 W Panels and 40 x 2500 kW Inverters |
| 6 | Projected Modules Area Required | ~ 140 ha |
| 7 | Approximate Land Area Required | ~ 140 ha |
| 8 | Expected Output | ~ Avg 200 GWh per year |
| 9 | Carbon Emission Saving | ~ Avg 180 M tonnes per year |
| 10 | Estimated Project Cost | Project Cost: $160 M |
| 11 | Grid Connection | 132 kV Transmission Line 2.5 km south of the Solar Farm |
| 12 | Warranted Life of Power Plant | 30 years |
| 13 | Expected System Commissioning Period | 30 June 2017 |
| 14 | Power Feeding to Grid | 1 July 2017 |




Figures – farm paddock and modelled spread of solar on the Creswick site.

All installations related to the Solar Farm will be setback by at least 9 metres from the property boundary to allow for fire access (refer to Attachment on Location Plan). Appropriate management plans including a whole of Farm Management Plan and Bushfire Management Plan will be prepared by SBG together with our specialist Consultants.

The existing farm houses, out buildings and sheds lay across about 8 ha of land in the 'Creswick farm house precinct'. With the exception of the main farm house retained for the manager of the property, a 'visitor precinct' will be developed staged with the construction of the solar farm to create a tourist destination.


We anticipate our visitor precinct will include:

- a new, purpose built integrated visitor Centre / retail outlet including local Cunderdin/wheatbelt craft and produce, as well as goods relevant to and promotional of the solar farm;
- viewing platform to view the solar farm (to be confirmed, or integrated into the visitor Centre depending on the outcome of architect's recommendations);
- tea house/café style outlet to cater for visitors and also for occasional events on site;
- facilities to allow visits by education and research as well as farming and businesses groups, to learn about integrated solar and farm use; and

- re-purposed or new buildings and related installations to provide a demonstration of a range of cleantech solutions for rural and regional Australia including solar pumping, desalination, and other technologies in the farm precinct.

All of the above visitor precinct plans are subject to design work to be undertaken. Initial consultations have begun with landscape architects and specialist sustainable building architects, who will be engaged to deliver a sustainable design for the visitor precinct, and indeed the whole of the solar farm. Development of the visitor precinct will be undertaken with ideas and input sought from the local Cunderdin community.

All subsequent ensuing construction work within the visitor precinct requiring council approval will be submitted once the precinct plan is completed. While we will provide further documentation and seek additional building approvals as may be required for this element of the project, we seek and would welcome Council's advice and endorsement on this component of the project.

SBG has met several times with the Shire of Cunderdin CEO and the planning officer, and has received good guidance and support for the project.

### 3.6 Community and Economic Benefits

The project cost for developing the Solar Farm is estimated at A$160 million and we are currently working closely with the Financier and Investors to finalise the funding for the project with the view to having financial close by end November 2016.

The project is being planned to source as much as practicable local, regional, or Western Australian labour hire, materials. SBG anticipates there will be specific flow-on economic benefits and local employment for Cunderdin, not least of which will be the development of an iconic attraction drawing new visitors and tourist to Cunderdin to maximise benefits to the local community.

### 3.7 Site Layout Plan

The Solar Farm Installation will utilise the latest technology and equipment which is proven, reliable technology with minimum locality impact, no environmental impact, long term reliability and which maximises the output.

In this context, the single-axis trackers will be utilised which is proven to increase the productivity of the Solar Farm by maximising the output by around 20%.

The Solar Farm Installation will consist of the single axis trackers hosting the Solar Panels, as well as cabling, inverters with in-built transformers and a sub-station.

A boundary security fence will be constructed and screening vegetation will be planted around the perimeter of the farm. Vegetation for any screening, beautification or land rehabilitation will be selected from locally native species based on recommendations from our environmental consultants.

There is some existing vegetation on the site, consisting of mature trees and regrowth. Consideration will be given to configuring the solar farm to retain as much of the endemic vegetation as possible, and offsets (replacement planting) will be provided for all vegetation removed. Additional offsite offsets will be supported to ensure a sustainable outcome for the development.

## 4. SITE SERVICES

### 4.1 Water

Water demand for the proposed project is minimal and so can be adequately serviced by existing water on site together with the existing water connection from Water Corporation.

### 4.2 Drainage

There are no concerns about flooding on Land and natural dispersion of water will continue in the existing arrangements, including the creek and this will not be altered by the introduction of the Solar Farm.

## 5. ENVIRONMENTAL AND TOWN PLANNING CONSIDERATIONS

### 5.1 Environmental Consideration and Impact

In Western Australia the Environmental Protection Act 1986 (the Act) is the principal instrument for environmental protection and governs the environmental approvals process. All proposed projects and schemes that may have an impact on the environment are required to be assessed under Part IV of the Act.

The Council administration has informed us at our meetings with the administration that there are no significant environmental impacts or issues as the site is on cleared farming land with only sparse remnant vegetation remaining. Nevertheless, as mentioned above, a Farm Management Plan will be developed by our Environmental consultant which will take into account all Environmental Factors and issues, if any identified by the Consultant.

The panels are not adjacent to any residences and as such does not pose an impact visually.

As we are building a solar farm, there are no noise radiation or emission from solar panels or solar farms and we can provide further information if that is required.

Solar power facilities in fact reduce the environmental impacts of combustion used in fossil fuel power generation, such as impacts from greenhouse gases and other air pollution emissions. Unlike fossil fuel power generating facilities, solar facilities do not emit air emissions of air pollutants such as sulphur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, and the greenhouse gas carbon dioxide during operations. In addition to these benefits of solar development, construction and operation of solar facilities creates both direct and indirect employment and additional income in the regions where the development occurs.

The environmental benefits of the Sun Brilliance Solar Farm to the community are outlined below.

- **Renewable electricity generated per year**

  Sun Brilliance Solar Farm will generate approximately 200 Gigawatt hours (GWh) of renewable electricity per year.

- **Greenhouse gas emissions displaced**

  The proposed solar energy facility will displace approximately 190 million tonnes of carbon dioxide or greenhouse gas emissions per year.

- **Average number of households**

  The proposed solar energy facility could supply enough power each year to service hundreds thousands of households in Western Australian including regional centres / areas.

- **Equivalent number of trees that would need to be planted**

  The 190 M tonnes of greenhouse gas emissions displaced by the Sun Brilliance Cunderdin Solar Farm each year would be equivalent to the amount of carbon that would be locked up would require planting hundreds of thousands of trees.

Environmental impacts, mainly during the construction phase, will then be managed under a Works Approval.

### 5.2 EPBC ACT

Our environmental consultant has confirmed that the proposed development area does not contain any Declared Rare and Priority Flora or Threatened Ecological Communities.

### 5.3 Fire Safety

The Solar Farm Facility will comply with the Council's annual Firebreak Notice and Fuel Hazard Notices throughout the construction phase, and the life of the project.

A Bush Fire Management Plan will be used as part of our whole-of Farm Management Plan, to be prepared by our consultant.

Other plans, such as a Fire and Emergency Management Plan, will be developed for the site as required.

### 5.4 Road Impacts

During construction period, there will be significant traffic into and out of the site. This will consist of delivery trucks and vehicles of construction staff. The site layout will ensure there is suitable parking and set-down space on site, and no vehicles will be parked along public roads.

Once the construction of the solar installation is completed, there will be minimal traffic into

and out of the site from an operational point of view.

As plans for the visitor precinct are developed with our planners, visitor estimates will be made, and additional guidance and approval will be sought from council. All visitor accessible roadways and pathways will be paved with red asphalt or similar materials.

### 5.5 Parking

During construction phase, sufficient parking will be available on site to meet the predicted amount of traffic at the site.

As plans for the visitor precinct are developed with our planners, parking estimates will be made, and additional guidance and approval will be sought from council. All visitor parking will be paved with red asphalt or similar materials.

### 5.6 Noise

The nature of a solar farm installation ensures that there is no excess noise generated from the installation itself. There is no noise generated by the panels or inverters. There will be minimum noise generated from the switchyard area, and the planned substation.

### 5.7 Odour

There will be no odour generated from the solar facility.

Some agricultural activities will be continued including grazing.

Visitor toilet facilities will be maintained as per any standard residential or commercial facilities.

### 5.8 Buildings

As plans for the visitor precinct are developed, all subsequent work for the visitor precinct requiring council approval will be submitted once the precinct plan is completed.

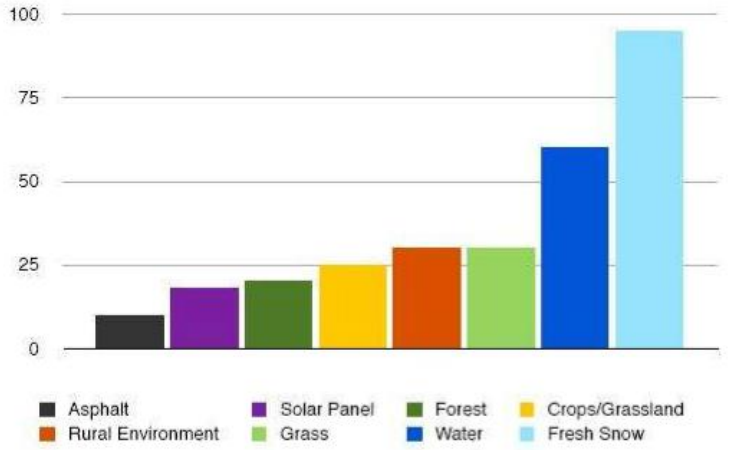
### 5.9 Visual Appearance

Due to the low profile of a solar farm installation, viewshed impact will be minimal. Our landscape architects are awaiting final design parameters to allow them to develop a viewshed map and this will be provided once available.

### 5.10 Light Reflection from the Solar Farm

Solar panels are designed to absorb light, and accordingly reflect only reflect a small amount of the sunlight that falls on them compared to most other everyday objects. Most notably, solar panels reflect significantly less light than flat water.

In fact, glass, one of the uppermost and important components of a solar panel, reflects only a small portion of the light that falls on it–about 2-4%, depending on whether it has undergone an anti-reflective treatment. These days, to increase solar panel efficiency and power output, most panels are treated with some kind of anti-reflective coating to maximise efficiency.




Several airports around the world have now installed solar farms and no negative impact has been reported due the reflection of sunlight.

### 5.11 Health Hazard due to Reflection of Light from the Solar Farm

Solar panels are inert and not harmful, and there is no evidence to suggest any adverse effects of solar panels on human or animal health.

### 5.12 Livestock Grazing

While solar farms have large land footprints, not all of the land is actively taken up by solar panels or related infrastructure. Typically, modules in solar farms are installed on framing systems mounted on piles. Disturbance to the ground is usually less than 5 per cent of the area used, and only around 40 per cent of the surface is over-sailed by solar modules. As solar modules are tilted and raised on posts to avoid shading, the land beneath the module, as well as unshaded land between rows, is still available for plant growth, allowing for agricultural activities such as grazing.

Grazing of livestock within solar farms is the most popular dual use option, especially since this practice has the additional benefit of controlling vegetation growth. The presence of solar modules does not affect stock density, and provides shelter to grazing livestock.

### 5.13 End of Solar Farm life

At the end of serviceable life, all materials on the solar farm would be salvageable and fully recyclable, and farm pastures would be suitable for a renewed solar farm, or return to full agricultural use.

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**********Confidential**********