FREQUENTLY ASKED QUESTIONS

What is the Project status?

The Project has been granted development approval.

Who is EPS Energy?

EPS Energy is an Australian-owned and based renewable energy company providing relevant expertise for the creation and development of solar and wind projects in Australia. EPS Energy develops renewable energy projects at the commercial, industrial and utility scale.

EPS Energy is the development manager for the Bungama Solar Project (the Project).

What is the Project?

The Project is a newly proposed large utility scale solar photovoltaic plant with battery storage to feed into the National Electricity Market.

Why is the Project proposed to be located where it is?

On behalf of Bungama Solar, EPS Energy undertook an extensive solar site identification assessment across the Eastern Australian National Electricity Network examining potential project areas based on several criteria including:

- Proximity to electrical substations;
- Access to existing electrical substations and capacity of each substation to accept new generation;
- Marginal loss factors and future forecasts;
- Consideration of known solar projects proximate to a proposed project area and the potential for impact on capacity and connection;
- Irradiation levels;
- Agreements with landowners to host a project;
- Utilised land such as land used for agricultural land uses to reduce the likelihood of the solar development encountering significant areas of native vegetation, Aboriginal cultural heritage items or other environmental constraints;
- Environmental analysis of ecology, archaeology and potential environmental constraints including flooding;
- Favourable topography and geotechnical conditions for constructing and operating a solar development;
- Proximity to towns but equally enough distance between the site and urban populated areas;

- Suitable infrastructure surrounding the project area e.g. roads access for construction and operation of a solar development;
- NEM capacity, grid strength and the ever-increasing market demand for renewable energy;
- Favourable response from enquires with the Transmission Network Service Provider (ElectraNet); and
- Details on interstate connectors and relevant known transmission constraints.

Why is the Project being developed?

South Australia's mix of energy supply sources is rapidly evolving with coal-fired power generation ceasing in South Australia and the percentage of energy, in particular electricity generation, being sourced from renewable energy. Broadly, South Australia recognises that high levels of solar and wind together with other forms of generation and the right grid stability services can safely deliver affordable and sustainable power.

The Project will contribute to the delivery of affordable power from renewable energy. Development of large scale generation assets within South Australia will increase competition for dispatching power to the South Australian grid and hence assist in reducing electricity prices over the long term.

The Project will meet approximately 1% of the Federal Government's objective to achieve an additional 33GW of electricity from renewable sources by 2020 under the Renewable Energy Target.

The generating capacity of the Project is equivalent to:

- Reducing ~497,000 tonnes of GHG emissions each year;
- Powering ~86,400 homes each year;
- Taking ~195,900 cars off the road each year;
- Planting ~69,500 trees each year.

How far along is the Project in being approved and what is the Project timeline?

The project has been granted approval by the State Commission Assessment Panel (SCAP). The Project is now completing pre-construction works.

How many jobs will be created and will you source them locally?

EPS Energy has and will continue to engage South Australian consultants to undertake the studies and investigations that will inform the Project including the design. Similarly, EPS Energy will engage the local workforce for construction and maintenance wherever appropriate.

The construction phase will generate the most employment opportunities with approximately 275 equivalent full-time jobs.

The operation phase will generate approximately 8 full time equivalent jobs over the lifetime of the Project.

There will be opportunities for local engagement and employment for a variety of services and equipment required to construct the Project, for example, site preparation services, construction material supplies, structure assembly, electrical services, panel installation and general labour services.

Employing local services is mutually beneficial as it provides opportunities for locals to be involved in the Project in a remunerated capacity and it is substantially more cost-effective for the Project

development, as it negates the need for additional costs that external workers would ensue, including travel and lodging.

What is meant by "Local Community Fund"?

A Local Community Fund is proposed as an annual financial contribution for the life of the Project. The Community Fund is intended for the local community who are hosting the Project to assist with funding environmental, social and economic development opportunities for the community.

More details about the Local Community Fund, including the amount and management of the fund, will be developed as the Project progresses.

Is the Project permanent?

The Project is expected to operate for about 30 years with further consideration to extending the life of the Project to be given at that time. Decommissioning and restitution of the land will occur at the Project life end.

As the installation process is relatively non-invasive and does not involve mass excavation, rehabilitation upon decommissioning will be straight-forward and will leave the land in a very similar condition to pre-development. Upon decommissioning, all infrastructure is removed and the land is returned to its original state and available for the permissible activities including agricultural activities.

When will construction start and how long will it last?

Subject to the relevant approvals, construction could begin in 2020, and typically may last for approximately 28 months to develop and commission.

How do solar farms work?

The Project will create energy from the sunlight via photovoltaic (PV) cells contained within the panels that will most likely be mounted on single-axis tracking systems. A row of solar panels is referred to as a string and together a series of strings form a solar array. Tracking solar panel systems involves strings following the sun's movement from east to west throughout the day for maximum collection of solar irradiation. At the end of the day the panels track back to the east ready for the next day.

The sun that is absorbed through the solar panels will be converted into direct current (DC) electricity by a series of PV cells. The PV cells are connected in strings to an invertor, which converts DC electricity into the more easily transported alternating current (AC). The invertors are connected to a voltage step up transformer to produce higher voltages ready for connection to the grid.

The invertors are connected through underground cables to a switching yard and by transmission lines to the substation for connection to the South Australian electrical grid. AC is supplied to most houses and used in most household appliances.

Battery storage is proposed as part of the Project and will provide additional power system security for the South Australian grid.

I've never seen a solar farm in person, what does it look like?

The proposed solar panel array will have a relatively low-profile and be uniform and therefore the Project is not expected to have a significant visual impact. The highest limit of the panel system,

dependent on the final system installed, would range between 2-4m. The visual perception of the solar project changes with distance and elevation. With either or both of these elements changing, the visual view field of the observer increases and a greater background view is generally obtained which absorbs the view of the solar farm into the wider scenic picture.

Single-axis tracking systems are constructed in arrays orientated north-south. The panels rotate from east to west throughout the day. When viewing the system at ground-level, from north or south the view is along the string lines of panels, which represents a uniform series of rows. A useful visual representation of these rows can be likened to the layout of grape vines in a vineyard. When viewed from the east or west, the side view of the string of panels is observed and typically a person on flat ground would not see further than a few rows at the panel height and have a clear view under the panels.

Will there be a buffer zone between the Project and neighbouring properties? If so what will the buffer zone consist of?

Typically, a perimeter road surrounds the solar array area with solar panel strings/rows placed at 10 metres or greater from a property boundary.

How will issues such as fire, weeds and pest animals be managed during the life of the Project?

Land management issues such as fire, weeds and pest animals will be managed in accordance with Federal, State and Local Government laws and applicable land management practices specifically prepared for the Project.

Will there be increased amounts of dust during and after construction?

Any dust generated during construction will be managed with required standard practices.

The groundcover will be managed through low pasture species for the operational life of the Project and consequently it is not expected that measurable dust generation would occur during operations.

Which roads will be utilised for machinery and traffic during the construction phase?

The Project is located adjacent to a major highway. Site entry will be from the highway through direct linking local roads and into the site. The impact on local road networks will be ameliorated through construction traffic planning.

Typically, for this type of development a Traffic Management Plan to manage the construction traffic must be prepared in consultation with the relevant government departments prior to the commencement of construction works.

How much glint and/or glare will be emitted from the panels and will this be monitored?

Modern solar panels utilise high grade anti reflective glass which acts to capture much more incident irradiance and minimize reflection resulting in glare. The sunlight can hit the module glass at incredibly low oblique angles approaching ninety degrees and still be captured and minimise reflection.
There are many examples of where solar systems have been installed at airports in Australia and worldwide with very strict antiglare requirements and which have attained CASA “No Hazard To Air Navigation” status.

A Glint and Glare Analysis for the Project with regards to roads and adjacent dwellings has been undertaken to inform the design and development application. The Glint and Glare will be available on this Project website and the State Commission Assessment Panel website.

How will the Bungama Solar Project affect my property value?

The issue of property value is an extremely complex one with fluctuations in price being subject to a vast number of factors – many of which are subjective, such as the amount of light, access to services, the condition of houses or improvements, views, amenity of the local area and the availability of infrastructure servicing such as electricity.

It is important to highlight that the Project will not preclude any future uses of either the subject properties or surrounding properties. The proposed solar facility does not alienate the use of any surrounding properties, nor impose encumbrances on the adjoining properties.

With appreciation that infrastructure designed to deliver renewable energy across the entire community, which has broad public interest, can have varying impacts on individual properties, it is recognised that the Project may have no amenity impacts at all to varying perceptions of impacts for some. Some residents may regard the development of the Project on the site as intrinsically unfair whilst others may have alternate supportive views, despite the fact that all public utility services (telecommunications, water, electricity etc.) require infrastructure that unavoidably results in varying amenity impacts within different communities.

In the development of the Project it is appreciated that impacts to amenity can be associated with perceptions of property value. Accordingly, the intention is to seek, to the best of our ability, to minimise amenity impacts, both generally and to specific surrounding properties. By minimising solar development impacts on amenity, the Project has due regard to the value of surrounding properties.

While respecting that some members of the community will not regard the public interest of the renewable energy project to outweigh the more immediate impacts to amenity, the development of the Project is permissible and must be considered on its planning merits. The planning merits are not a question of whether it does or does not have impacts, but rather whether those impacts to amenity are reasonable, have public interest and are sufficiently consistent with planning regulations.

What are electromagnetic fields (EMFs) and will they interrupt mobile, Internet, WiFi or television signals?

Electric and magnetic fields (EMFs) are a naturally occurring phenomena, as well as being produced by human activity. For example, electrical equipment ranging from high voltage transmission lines (powerlines) to household items such as a television, mobile phone, computer, hair dryer – even a kettle, all produce EMFs with fields increasing with voltage and current respectively.

For example, the strength of the EMF for high voltage transmission lines is highest directly under the centreline and begins decreasing in strength with distance from the centreline quickly matching normal home background levels and dropping to zero within 60 metres from the centreline. In order to manage EMFs from transmission lines, a designated buffer from the centreline is created which increases in distance respective to increases in voltage (i.e. a greater buffer is given to higher voltage transmission lines).

The Project design will adhere to the clearance distances for safety purposes and incorporate suitable buffers to limit exposures in accordance with a number of technical and legislative requirements. There should be little to no interruptions of communication signals as a result of the Project or associated infrastructure.

Do EMFs cause or contribute to health impacts?

We understand that some people are genuinely concerned about possible health effects from electromagnetic fields (EMFs) and are committed to addressing these concerns responsibly.

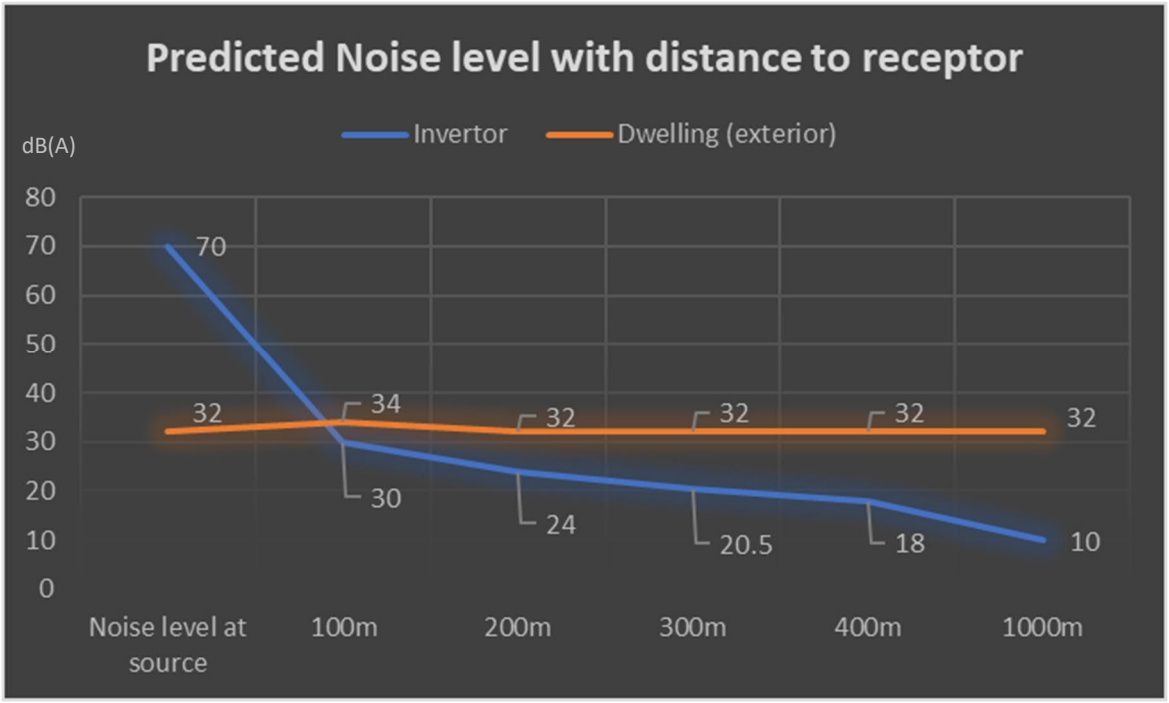
Australia has adopted the safety regulations recommended by the World Health Organisation (WHO). The public health and safety standards recommended by the WHO are based on a very large body of peer-reviewed science. From in excess of 25,000 articles published, the WHO, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and other international safety bodies advise that the weight of evidence shows that there are no substantiated or established health effects from exposure to EMF's.

The Project has a legal, environmental and ethical obligation to deliver a renewable energy project that operates safely and responsibly, without posing risk to any members of the general public. At all times, the operation of the solar facility will be undertaken safely and responsibly with EMF's significantly below WHO and Australian standards.

Do solar farms make noise?

Solar farms are made up of several key components including photovoltaic panels, single axis tracking systems, invertors and transformers. Photovoltaic panels are static with no moving parts. Single axis tracking systems typically are rotated by an electric motor (panel rows rotate very slowly to track the sun arc across the sky). Invertors and transformers convert the electricity from DC to AC and increase voltage. Noise is typically measured in decibels (dB) and has a logarithmic scale.

Solar panels do not make any noise. Tracking system motors (~50-56dB), invertors (~60-70dB) and transformers (~60-70dB) do emit noise. The noise is audible if standing next to these items, but decreases with distance. An example of the noise difference at the exterior of a dwelling in daytime as a result of an invertor operating at various distances from the dwelling, is shown in the graph below.



The predicted noise level difference at the exterior of a dwelling with an invertor operating at 100 metres is 2dB greater than the background noise level, whilst at 200m or greater no difference is observed. The audible difference of 2dB noise level would be difficult to discern. The image below illustrates the Decibel Scale with commonly recognised examples of equivalent noise levels across the Decibel Scale.