Solar Farms

Frequently Asked Questions.

Green Power

What is a solar farm?

A solar farm is a large-scale solar energy installation designed to generate electricity from sunlight. It typically consists of thousands of photovoltaic (PV) modules mounted on steel structures.

What is a PV module made of?

PV modules are made up of many individual and interconnected photovoltaic cells. The most common types of modules are monocrystalline silicon, polycrystalline silicon and thin film.

How do solar farms work?

Solar farms work by converting sunlight into electricity. The PV modules in the solar farm capture the sun's energy and convert it into direct current (DC) electricity. This DC electricity is then converted into alternating current (AC) electricity by an inverter.

Who assesses and approves solar farms to be built?

Depending on the state or territory where the solar farm is located, the approval for project is determined at Local or State Government level. Various different related assessments may be required throughout its planning and development phase, under relevant Local, State and Federal legislation.

Where does the electricity go?

Electricity is fed into a transmission line for distribution into the grid.

What is the lifespan of a solar farm?

A solar farm will typically operate for between 25 to 35 years.

What happens to solar farm at the end of its lifespan?

Typically, a specific project permit for a solar farm includes provisions related to decommissioning. At the end of lifespan, PV modules are typically decommissioned and removed from the site. The PV modules can be recycled, while the underground components are typically left in place. In future, it's likely solar farms could be repowered, which would likely include considerations like permit requirements, technology and infrastructure upgrades and grid capacity etc.

What are the maintenance requirements for solar farms in Australia?

Solar farms require regular inspections and maintenance. Requirements vary depending on the location and conditions of the PV modules. Maintenance requirements typically include vegetation maintenance and cleaning of the PV modules.

How much land is needed to build a solar farm?

The amount of land depends on the overall number of PV modules to be installed, with considerations to module size and spacing requirements, as consideration for additional project infrastructure such as internal access roads, substation, site offices etc.

Who usually owns the land where solar farms are located?

Typically, solar farm owners will enter a long-term lease agreement with a local landowner for the purpose of constructing and operating a solar farm on their property.

Can local landowners continue farming land if they have PV modules constructed on their property?

Typically, the solar farm infrastructure occupies a large portion of the overall project area, and the land is used exclusively for energy generation. However, combining agricultural production and energy generation is becoming an increasingly common practice. Some solar farm operators in Australia and internationally have commenced grazing sheep within the solar farm area and internationally some have started undertaking some cropping activities.

Apart from PV modules, what else is constructed on a solar farm?

Typically, a solar farm will also require the construction of some internal access roads, underground cabling, Power Conversion Units, a substation, storage facilities and operational and maintenance facilities and other related equipment and infrastructure.

What is the cost of building a solar farm in Australia?

The cost of building a solar farm in Australia depends on a range of factors, including the size of the project, location, and technology used. However, according to the Clean Energy Council, the cost of building a new solar farm in Australia has fallen significantly in recent years and is now one of the cheapest forms of new build electricity generation.

What are the benefits of solar energy for regional communities in Australia?

Solar energy can bring a range of benefits to regional communities in Australia, including job opportunities, investment in local infrastructure, and a source of reliable and affordable electricity. Some solar farm projects also offer community benefits programs, which provide funding for local community projects and initiatives.

Are solar farms reliable sources of electricity?

Solar farms are an intermittent source of electricity, meaning the energy output is affected by changes in irradiance (sunlight). Typically, solar farms are constructed in locations where there is good solar resource, which can help to ensure reliability.

Do PV modules work when the sun's not shining?

Typically, solar farms can produce energy from daylight so can still produce some electricity even when the weather is overcast.

What are the environmental impacts of solar farms in Australia?

Solar farms in Australia can have a range of environmental impacts. Typically, environmental impacts are assessed by the relevant regulators during the planning and development phase of a project. If a project is granted a development approval it typically sets out conditions related to managing any environmental impacts for the project.

Can solar farms affect health?

There is currently no consistent evidence that solar farms cause adverse health effects in humans.

Do solar farms have glint and glare?

PV modules are designed to absorb as much light as possible and not to reflect it, however sometimes glint can be produced as a direct reflection of the sun from the surface of the PV module, and glare can occur as a source of bright light. Assessment of potential glint and glare impacts are undertaken throughout the project planning phase and solar farms are designed so the impact is low.

Is cultural heritage taken into consideration?

Legislation regarding the protection of cultural heritage varies across Australian states and territories. Typically, a cultural heritage assessment is undertaken during the planning and development phase of a project.