

Richmond Valley Solar Farm



Photograph of the project area

Richmond Valley Solar Farm is a utility-scale solar energy project involving a large solar farm and a battery energy storage system (BESS). The project is proposed for land on either side of Avenue Road near Myrtle Creek in the Northern Rivers region of New South Wales. It is estimated that the solar farm would have a generation capacity of up to 500 megawatts (MW) and the long-duration BESS would have a power capacity of 275 MW and an energy storage capacity of up to 2,200 megawatt hours over 8 hours.

Planning and assessment

Utility-scale solar farm developments in NSW with a capital investment of more than \$30 million are considered State Significant Development (SSD) and subject to a rigorous assessment process managed by the NSW Department of Planning, Housing and Infrastructure (DPHI).

Ark Energy lodged a Scoping Report for the project with the Department in July 2022, and based on this the project was issued Planning Secretary's Environmental Assessment Requirements (SEARs), which detail the general and technical assessment requirements for the project's Environmental Impact Statement (EIS).

Work for the various assessments required for the EIS are progressing and as more information about the site becomes known, the design has been modified accordingly.

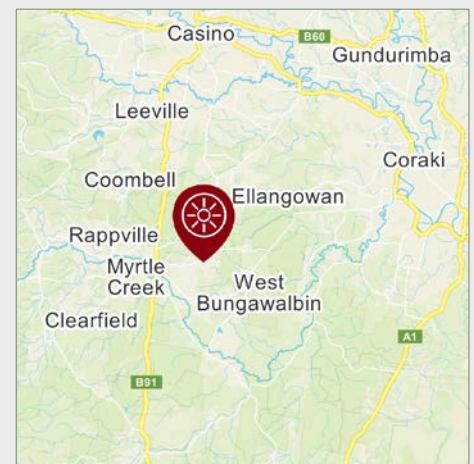
Key matters that must be addressed in the EIS include biodiversity, heritage, land, landscape and visual, glint and glare, noise and vibration, transport, water, hazards, social impact, economic and waste.

The Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) has also determined the proposal to be a controlled action that will require assessment and approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). DCCEEW's assessment requirements have been incorporated into the EIS and the proposal will be assessed by DPHI under the bilateral agreement between the NSW and Commonwealth Governments. The project's EPBC documentation is available from the project's page in the EPBC Act Public Portal (Ref 2023/09641): epbcpublicportal.awe.gov.au.

The project's SEARs are available on the Richmond Valley Solar Farm page in the NSW Government's Major Projects Planning Portal (SSD-41020244). Visit www.planningportal.nsw.gov.au/major-projects/projects/richmond-valley-solar-farm or scan the QR code right.



Location



The site for the proposed Richmond Valley Solar Farm is near Myrtle Creek in the Northern Rivers region of NSW. It is approximately 7 km east of Rappville and 25 km south of Casino, with Ellangowan to the north and West Bungawalbin to the east.

The location is well suited for solar energy generation. The land was previously used for private forestry and is relatively flat. There is an excellent solar resource and it is close to the transmission network, with the Coffs Harbour to Lismore 330 kV powerline intersecting the north-west corner of the site.

It is estimated that the project would have a generation capacity of up to 500 megawatts.

New renewable energy projects are required to help the NSW Government meet its targets to halve emissions by 2030 and achieve net zero by 2050.

Landscape and visual

Assessment of the solar farm's visual impact is an important requirement for the EIS. The methodology and technical requirements for the assessment are outlined in DPHI's *Technical Supplement - Landscape and Visual Impact Assessment*.

The visual impact assessment process ensures that assessments are proportionate to the scale and impacts of the development, easy to understand and consider community views and values of the surrounding landscape.

The Landscape and Visual Impact Assessment will comprise of a landscape character impact assessment (the assessment of impact on an area's cumulative built, natural and cultural character or sense of place), and a visual impact assessment (the assessment of impact on views).

Photomontages (example on opposite page) and wireframes produced by technical specialists using custom industry software can accurately show what the solar farm would look like from representative public viewpoints.

The visual impact assessment will be completed by independent specialist consultants and available when the EIS is placed on public exhibition by the DPHI.

Prior to construction a Landscape Plan will also be developed detailing any plans for landscape and vegetation screening.

Glint and glare

Significant glint and glare impacts are uncommon with large-scale solar energy developments. Solar panels are designed to absorb light and typically reflect less than 2% of incoming sunlight. Glint and glare also occurs only under very specific geometric and atmospheric conditions, and typically for short periods of time. Many solar projects now also use tracking systems that can be adjusted to prevent glint and glare.

A glint and glare assessment will be undertaken in accordance with the requirements in Appendix C of the DPHI's *Large-Scale Solar Energy Guideline*.

Aboriginal cultural heritage

Ark Energy recognises the continuing connection that Aboriginal and Torres Strait Islander Peoples have to their land and Traditional Custodians are important project stakeholders.

The project team is engaging with the project area's Traditional Custodians to ensure the protection and maintenance of cultural heritage on the site and respect to traditional values and culture are upheld.

Biodiversity

Avoiding and minimising impacts to flora and fauna species that might utilise the project area is a priority, and a comprehensive and thorough assessment of potential ecological impacts is required by both the NSW and Australian governments.

Key ecology matters that must be addressed in the Biodiversity Assessment Report are identified by the SEARs, which incorporates the assessment requirements under the Commonwealth EPBC Act.

The ecological assessment work is being done by specialist ecologists and survey teams over multiple seasons. As findings become available the project's design has been refined and modified accordingly.

The project team is committed to collaborating with ecology stakeholders and host landowners to implement responsible strategies to mitigate impacts and a key aim of the project will be to achieve net positive outcomes for biodiversity in the area over the longer term.

For more see the *Ecology information sheet*.

Electric and magnetic fields

Electric and magnetic fields (EMFs) are found everywhere, including in the natural environment, and are produced wherever electricity or electrical equipment is used.

According to health authorities, including the World Health Organisation (WHO) and the Australian Radiation Protection and Nuclear Safety Agency (APRANSA), EMFs from electrical transmission lines are not considered a risk to human health.


Leading global health bodies including WHO continue to evaluate research into health effects associated with exposure to EMFs, and APRANSA notes "*The scientific evidence does not establish that exposure to EMFs found around the home, the office or near powerlines and other electrical sources is a hazard to human health*".

The current standard for human exposure limit to magnetic field levels recommended by APRANSA is 2000 milligauss (mG), set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 2010. 330 kV transmission lines generally emit 10-50mG at the edge of a high voltage transmission line easement and 20-200 mG directly under a high voltage transmission line, which is significantly below the international standard for human exposure limit.


Potential EMF impacts will be assessed against the *ICNIRP Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields*.

Electric and magnetic fields

EMFs are found everywhere, including in the natural environment, and are produced wherever electricity or electrical equipment is used. These are examples of everyday electrical appliances and infrastructure, and their range of magnetic field levels, measured as milligauss (mG). Source: EnergyCo 2023




At the edge of transmission powerline line easement
10-50mG




Laptop
2-20mG




Hairdryer
10-70mG



Stove
2-30mG



Under a distribution powerline
2-20mG



Under transmission powerline
20-200mG



Photomontage showing what the solar farm would look like from Avenue Road, facing east from the western boundary of the project site.

Agriculture

It is possible for host property owners to combine solar farming with other agricultural land use if they wish to.

Work for the Soil, Land and Agriculture Assessment to date suggests the impacts on agriculture will be generally minor, temporary, and limited to the development footprint.

It is anticipated that by adopting the principles of impact minimisation including targeted soil and erosion management and effective decommissioning and rehabilitation, the project will have no permanent negative impacts on agricultural resources or productivity.

Construction, roads and traffic

A Traffic and Transport Impact Assessment is required for the EIS, and comprehensive plans that are compliant with legislation and the local government planning scheme are required for construction and traffic management.

Construction can only commence after the detailed engineering design and any necessary road upgrades have been completed. Prior to any road upgrades a Traffic Management Plan will be prepared in consultation with Transport for NSW and Richmond Valley Council, with details on routes, upgrade works, measures to minimise impacts, code of conduct and a flood response plan.

A detailed Construction Environment Management Plan will also include measures to mitigate and manage any biosecurity risks and the spread of weeds, including cleaning of vehicles and construction equipment. There will be a particular focus on weeds listed under the *NSW Biosecurity Act (2015)*.

Property values

To date, there is little reliable evidence that large-scale renewable energy developments influence adjacent land values, particularly for solar energy facilities.

A 2020 real estate impact study conducted by the Orion Renewable Energy Group in the US, found that the proximity to the solar farms did not deter sales of nearby agricultural land and residential homes, nor did it deter the development of single-family homes on adjacent land.

The study concluded that no consistent negative impact had occurred to adjacent property that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators.

Fire safety and management

A comprehensive Bushfire Risk Assessment is required for the EIS. In accordance with the NSW guideline, *Planning for Bush Fire Protection 2019*, a site-specific Bushfire Emergency Management and Operations Plan will also be developed. It will detail robust measures to mitigate bushfire risk including Asset Protection Zones (APZ) for infrastructure, clearances to vegetation, fire fighting access and water.

Prior to construction a Fire Safety Study and Bushfire Emergency Management and Evacuation Plan will also be developed.

Plans will be developed in consultation with Fire and Rescue NSW, the local Fire Control Centre, National Parks and Wildlife Services and the NSW Rural Fire Service.

For more see the **Fire Management** information sheet.

Decommissioning

Solar farms have an operational life of approximately 25-30 years. Options at the end of this period include extending the life of the solar farm via refurbishment, repowering the site with new infrastructure or decommissioning.

In accordance with development consent conditions a Decommissioning and Rehabilitation Plan will be prepared and periodically updated to ensure alignment with best practice and available recycling technologies.

If the operator decides not to extend or refurbish the solar farm it will be decommissioned within 18 months of ceasing operation. Decommissioning would involve the removal of all above ground infrastructure including solar panels, electrical infrastructure and maintenance buildings, and the site would be rehabilitated and returned to its former state.

Key benefits

COMMUNITY BENEFIT PROGRAM - The project will involve a program to provide meaningful and lasting benefits for the local community. It will be designed in collaboration with local stakeholders and provide funding annually from the start of construction and for the life of the project.

EMPLOYMENT - The project is expected to generate more than 300 jobs during the construction period.

ECONOMIC BOOST - Construction would generate significant expenditure within the local and regional economy including work for contractors and increased patronage for surrounding accommodation, retail, service and hospitality businesses.

NET GAIN FOR BIODIVERSITY - A goal of the project will be to achieve a net gain for biodiversity in the project area over the longer term. This might involve initiatives such as rehabilitation of the initial construction disturbance and environmental offsets with improved management regimes.

CLEAN ENERGY - Renewable energy is the most efficient and cheapest source of bulk energy generation. More is urgently needed to replace fossil fuel sources and meet growing electricity demand. Growth in renewable energy capacity will put downward pressure on wholesale electricity prices and deliver affordable, clean, reliable electricity to households and businesses. Richmond Valley Solar Farm would have an output capacity of up to 500 megawatts and is expected to generate approximately 1,100 GWh of clean energy annually.

Planning & assessment

Utility-scale solar farms in NSW are considered State Significant Development and assessed by the NSW Department of Planning, Housing and Infrastructure (DPHI).

1 Site selection and preliminary investigations ✓

2 Initial concept and consultation ✓

3 Scoping Report submitted to the former NSW Department of Planning and Environment (DPE) ✓

4 Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS) issued by DPE ✓

5 Referral to the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) for review under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). ✓

6 Determination by DCCEEW – controlled action (ref 2023/09641) ✓

7 Studies, assessments, design **WE ARE HERE**

8 Design completed, finalising EIS for lodgment

9 Development application (DA) and EIS lodged with DPHI (formerly DPE)

10 DA and EIS on exhibition for public comment

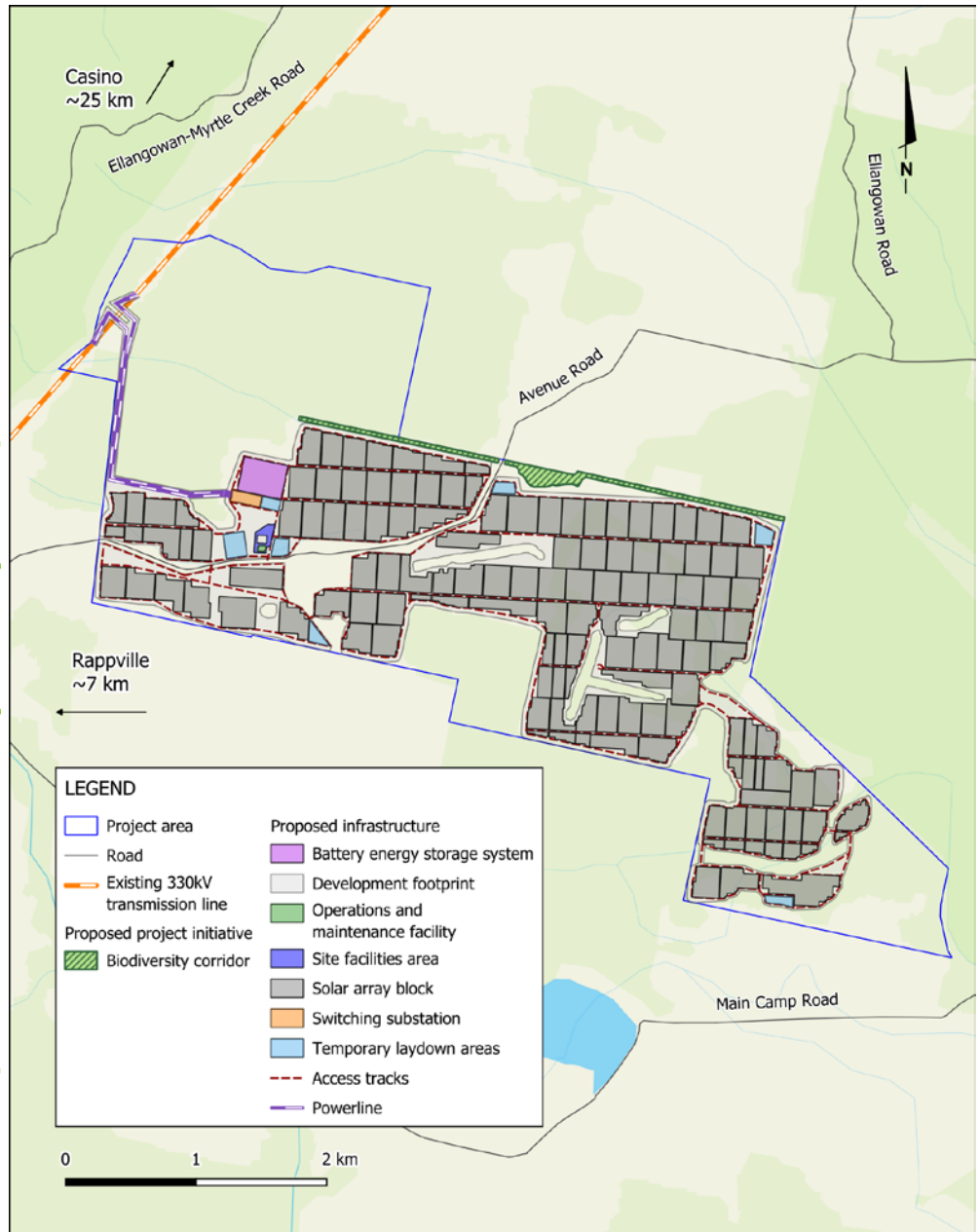
11 Responses to submissions and requests for additional information (if required)

12 Assessment by DPHI

13 DPHI assessment report and recommendation

14 Determination by DCCEEW

Richmond Valley Solar Farm proposed site layout



The map above shows the current proposed design for the Richmond Valley Solar Farm including the powerline connection corridor, and proposed locations for the laydown areas, solar panels arrays, battery energy storage system and other associated infrastructure.

Questions and feedback welcome

Ark Energy appreciates the importance of involving local stakeholders, and input from interested community members is welcome and valued.

Comments and feedback can be sent directly to the project team via the feedback form on the website or the contact details below. Where practicable local input will be factored into the project's design to improve outcomes and community benefits.

More information

Tel - 1800 731 296

Email - info@richmondvalleysolar.com.au

Newsletters – register at arkenergy.com.au/mailling-list-details for email news, or to receive newsletters by post, send us your postal address and a request to be added to the mail (post) list.

Website - richmondvalleysolar.com.au or scan the QR code right



Scan QR code to visit the project website