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 with battery storage, proposed to be located on land either side of Avenue Road near Myrtle Creek in the Northern Rivers region of New South Wales (NSW).

The project is estimated to have a generation capacity of up to 500 megawatts and battery storage capacity of up to 500 megawatts.

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 and Environment (DPE).

In July 2022, Ark Energy lodged a Scoping Report for the Richmond Valley Solar Farm and DPE issued Secretary's Environmental Assessment Requirements (SEARs) for the project. SEARs outline the general and technical assessment requirements for the Environmental Impact Statement (EIS).

The project's Scoping Report and 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.

Work for the various technical assessment reports required for the EIS are progressing and as findings have become available the design has been modified accordingly.

Key matters to 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 proposal will also be referred 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), which protects Matters of National Environmental Significance (MNES).

Based on the referral DCCEEW will determine whether the proposal also requires assessment under the EPBC Act. If it does, assessment requirements from DCCEEW will be added to the EIS and the proposal will be assessed by DPE under the bilateral agreement between the NSW and Commonwealth Governments.

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 the villages of 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 impact

Assessment of the solar farm's visual impact on the landscape is an essential requirement for the EIS. The approach and technical requirements for the assessment are outlined in DPE's *Technical Supplement - Landscape and Visual Impact Assessment*.

The Landscape and Visual Impact Assessment comprises 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).

One of the tools used for a visual impact assessment are photomontages, which show what the solar farm would look like from representative public viewpoints where it can be seen. Photomontages are produced by technical specialists and involve combining location photographs with a digital representation of the solar farm called a wireframe.

Wireframes are produced using specialist industry software and based on precise locations and dimensions of the proposed solar panels to give an accurate and correctly scaled representation.

Specialist visual consultants are conducting the assessment and will be available when the EIS is placed on public exhibition by DPE.

Glint and glare

Significant glint and glare impacts are uncommon with large-scale solar energy developments for several reasons. Firstly, solar panels are designed to absorb light and typically reflect less than 2% of incoming sunlight. Secondly, glint and glare typically occur for short periods of time and require very specific geometric and atmospheric conditions. Lastly, many solar energy projects now have tracking panels that can be adjusted to avoid or minimise glint and glare.

A glint and glare assessment will be undertaken in accordance with the requirements in Appendix C of the DPE'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 Owners 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 included in the EIS are identified by the SEARs, which incorporate the assessment requirements under the EPBC Act.

The ecological assessment work is being conducted by ecologists and site survey teams. As findings from the ecology work have become available the project's design has been refined and modified accordingly.

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

Electric and magnetic fields

Ark Energy acknowledges the concerns about potential impacts from electric and magnetic fields (EMFs).

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. "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" (Source: ARPANSA).

The current international standard for human exposure limit to magnetic field levels is 2000 milligauss (mG) set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 2010. This standard is recommended by APRANSA. 330kV 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**

Stove **2-30mG**

Under transmission powerline **20-200mG**

Hairdryer **10-70mG**

Under a distribution powerline **2-20mG**

Agricultural

The potential for a significant impact on agricultural production from renewable energy development has been widely asserted. An analysis by the NSW Agriculture Commissioner (2022) of the likely and worst-case land use changes, with the renewable rollout to 2051, did not indicate a material impact on agricultural production.

The Soils, Land and Capability and Agriculture assessment work and soil surveys are progressing. As findings from the survey work become available the project's design will be refined and modified accordingly.

Roads and construction traffic

The project will involve comprehensive construction and traffic management plans, compliant with Occupational Health & Safety legislation and the local government planning scheme. They will cover all construction and traffic management aspects including working hours, noise, traffic and dust.

Construction can only commence after the detailed engineering design has been completed. A detailed Construction Environment Management Plan will include measures to mitigate and manage biosecurity risks and the spread of weeds or pathogens between infected and non-infected areas during construction.

This will include measures such as cleaning of vehicles and construction equipment prior to entering the project site and crossing property boundaries. There will be a particular focus on weeds listed under the *NSW Biosecurity Act* (2015).

Property values

Ark Energy acknowledges the concerns that impaired visual amenities, as a result of the solar farm, could reduce property values. There is little reliable evidence of large-scale renewable energy developments influencing adjacent land values, particularly for solar 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. It must identify, and where possible reduce, potential hazards and risks associated with bushfires and the use of bushfire prone land. It must also demonstrate that the proposed development can be designed, constructed and operated to minimise ignition risks and reduce the likelihood of a fire impacting the project area or spreading to surrounding properties.

The Bushfire Risk Assessment will be developed in consultation with the NSW Rural Fire Service to ensure access for fire fighters, water supply, understanding of vegetation hazards, and preparation of a Bushfire Management Plan.

The assessment of potential hazards and risks associated with bushfires will comply with *Planning for Bush Fire Protection 2019.*

End of operation

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.

If the operator decides not to extend or refurbish the solar farm it will be decommissioned within 12-18 months of ceasing operation. Decommissioning arrangements would likely be outlined in development consent conditions. They would involve the establishment of a decommissioning fund by the operator and the removal of all above ground infrastructure including solar panels, electrical infrastructure and maintenance buildings. The site would be returned to its former state where practicable.

Key benefits

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.

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.

JOBS - The project is expected to generate approximately 200 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.

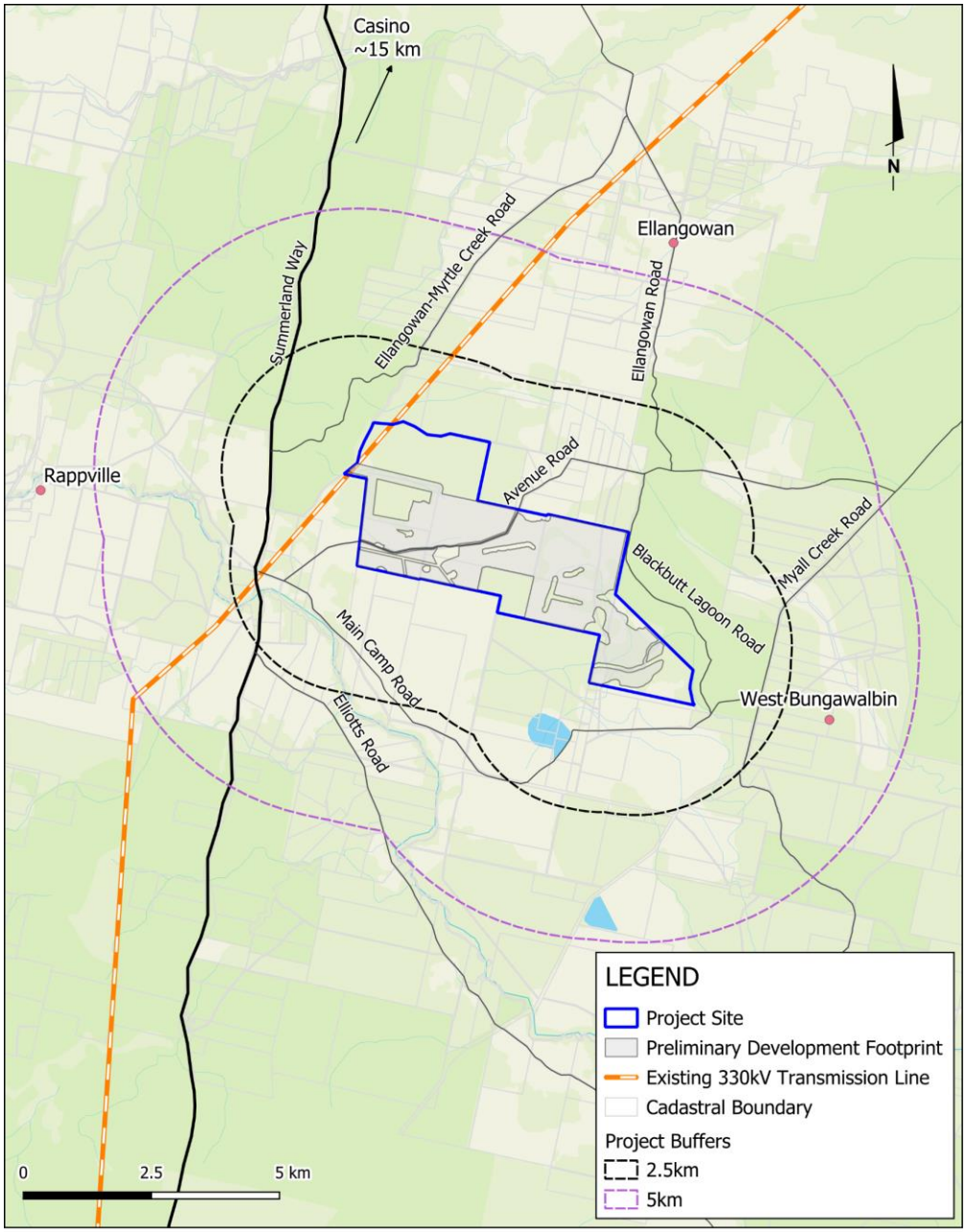
NET GAIN FOR BIODIVERSITY – A goal of the project will be to achieve a net gain for biodiversity in the project area over the longer term. This might involve various initiatives including rehabilitation of the construction disturbance and environmental offsets with improved land management regimes.

Planning & assessment

Utility-scale solar farms in NSW are considered State Significant Development and assessed by the NSW Department of Planning and Environment.

1. Site selection and preliminary investigations ✓
2. Initial concept and consultation ✓
3. Scoping Report submitted to the NSW Department of Planning and Environment (DPE) ✓
4. Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS) issued by DPE ✓
5. Studies, assessments, design — WE ARE HERE
6. 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).
7. DCCEEW determination on EPBC Act referral
8. Design completed, finalising EIS for lodgment
9. Development application (DA) and EIS lodged with DPE
10. DA and EIS on exhibition for public comment
11. Responses to submissions and requests for additional information (if required)
12. Assessment by DPE
13. DPE assessment report and recommendation
14. Determination by DCCEEW

Richmond Valley Solar Farm project area map



Invitation to participate in Richmond Valley Solar Farm's **Social Impact Assessment**

Ark Energy has contracted Umwelt Environmental Consultants to undertake an independent Social Impact Assessment (SIA) for Richmond Valley Solar Farm's EIS.

Local community members are invited to participate in the SIA. If you would like to share your views please complete the online survey **by 22 September** available via the QR code right or visit **www.research.net/r/RichmondValleySolarFarm**

Scan QR code for the SIA survey

More information

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