Birriwa Solar

Renewable Energy from ACEN

Fact sheet

Solar and farming. Growing our energy future.

Project Overview

The Birriwa Solar and Battery Project is a 600-megawatt renewable energy project that is being proposed across a preliminary area of 1,200 hectares of mostly cleared grazing land, about 20km southeast of Dunedoo.

We are also developing plans for a 1,000 megawatt over one hour battery energy storage system that will provide energy during peak periods and grid stability services.

A solar and battery project of this size typically takes two years to build after approval, employing between 600 and 800 people during construction and generating a number of ongoing full time roles during operations, as well as opportunities for local and regional contractors and suppliers.

It will generate enough energy to power the equivalent of 240,000 homes in New South Wales.

It will also use substantially less water than coal-fired power stations and produce almost no noise, no effluent or other toxic waste or emissions.

Solar farms typically have a lifespan of 30 years, with gains in technology opening up the possibility of longer operating timeframes. At the end of its life, the solar farm equipment can be removed, and the land returned to its original use.

Our project team has undertaken a number of environmental, social and technical assessments and surveys, as well as consultation with the local community.

This work and feedback has helped us to refine our Environmental Impact Statement (EIS) submission.

The Central West region

The Central West region of NSW has many opportunities for renewable energy to be developed in a way that optimises the land available for the dual purpose of energy and agricultural production.

The Birriwa Solar and Battery project site is highly suitable for a solar farm and battery storage development. We approached landholders in the area several years ago to discuss their potential involvement in this project.

The NSW Government has also recognised the potential of the Central West Orana region, designating it one of five Renewable Energy Zones (REZ). EnergyCo NSW is the State Government agency that is responsible for coordinating the REZ developments. This includes electricity substation infrastructure known as 'energy hubs' as well as the connection and links to the electricity transmission network.

The site

Several landholders in the locality of Birriwa have agreed to be part of the initial investigation area for the project. The site has been selected due to its ideal features – flat or gently undulating land relatively free of vegetation due to historical clearing for agriculture.

It is also ideally situated away from towns but is still readily accessible. The site location will also allow the project to connect to the Merotherie Energy Hub and the transmission line being proposed by EnergyCo NSW.

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About ACEN Australia

ACEN Australia, formally UPC\AC Renewables, is an Australian based renewable energy developer. A partner of UPC Renewables since 2018, ACEN (formerly AC Energy) increased its ownership in UPC\AC Renewables in 2021 to be 100% by early 2023.

At ACEN Australia we develop, build and operate our projects. This means we are involved every step of the way, from the start of development through to when power is produced and sent to the grid. Our owner/operator business model means we are in partnership with our landholders, neighbours and community members for decades, not just months or years. We share the benefits from our developments with the community via initiatives such as grant funding for local projects, upgrades to local road infrastructure, supporting local sporting clubs, scholarship and traineeships and more.

Where we are

ACEN Australia is currently building the 720MW New England Solar Farm which also includes battery storage just outside Uralla in Northern NSW. This solar farm is being built on farmland, and we are working with host farmers to facilitate their sheep grazing onsite. Sheep grazing has been shown to be extremely successful in conjunction with solar farms thanks to improved pasture growth and shelter opportunities.

We have also gained approval to construct a solar farm and a battery storage project at Stubbo and have the Valley of the Winds wind farm under development in the Leadville and Coolah area. We are also active in Victoria, South Australia and Tasmania.

Our projects all have the same focus at their core – the landholders and the community.

Planning and Consultation

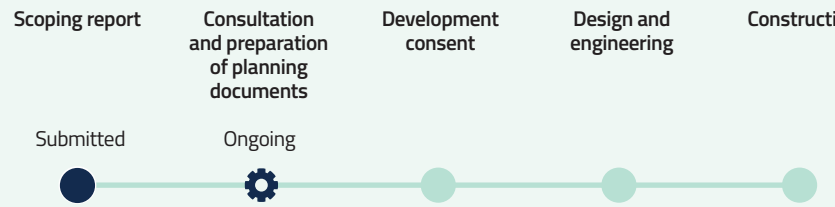
The Birriwa Solar and Battery Project is being assessed as a State Significant Development under Part 4 of the NSW Environmental Planning and Assessment Act 1979. The NSW Department of Planning and Environment (DPE) is the state planning authority for the project.

As part of this process, we will be submitting a Development Application (DA) and Environmental Impact statement (EIS) which outlines the project, its benefits and environmental and social assessments.

ACEN Australia places a large emphasis on working with local communities during this assessment and planning process to help us understand your views.

To help us achieve this, we have opened a Community Shop Front at 79b Herbert St, Gulgong, opposite Cobbs Bakery, which is open to the public each Tuesday and Thursday. You can also get more information and provide feedback on our project Facebook page and website.

Birriwa Solar and Battery project timeline



Register for project updates

Members of the local community can register for regular project updates via our website or by email. We have opened a new Community Shop front at 79b Herbert St, Gulgong - opposite Cobbs Bakery.

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Why we need Birriwa Solar

The Birriwa Solar and Battery project is a proposed 600-megawatt renewable energy project located approximately 20km south-east of Dunedoo, in the Birriwa district within the Mid-Western Regional Council local government area (LGA). The project is within the Central-West Orana (CWO) Renewable Energy Zone (REZ).

- The project will include a centralised battery energy storage system (BESS) of up to 600 MW for 2 hours. The BESS will enable electricity from solar to be stored and then released during times of demand.
- Birriwa Solar will help Australia transition to net zero carbon emissions, delivering low-cost renewable energy and jobs for the Central-West Orana region of New South Wales.
- The Project will generate enough renewable energy to power approximately 262,000 average Australian homes per year and contribute to Australia's domestic and international commitments of renewable energy development, including NSW's target of 50% renewable energy by 2030.
- The project will be developed across a 1,300-hectare site of cleared grazing land and will include rows of solar panels, electrical infrastructure such as inverters, a substation, cables and the battery system, access roads and other association infrastructure such as storage and maintenance facilities.

At a glance

Employ and Buy **LOCAL** commitment

Installed capacity of up to **600 MW**

Shared benefits through **COMMUNITY** benefit funding

Offset **6M** tonnes of CO_2 emissions over the life of the project

Power **262,000** average Australian homes each year

Contribute to NSW Target of **50%** renewable energy by 2030

Renewable Energy Zones (REZs)

The NSW Government is in the development phase for the State's first Renewable Energy Zone (REZ) in the Central-West Orana region. The Central-West Orana REZ is approximately 20,000 square kilometres centred by Dubbo and Dunedoo, on the land of the Wiradjuri, Wailwan and Kamilaroi people.

Five REZs have been identified in New South Wales, based on their potential to deliver additional clean energy to the National Electricity Market and support the transition away from coal-fired generation. These locations also benefit from existing energy resources such as sun and wind and have established grid infrastructure close by.

To support the development of the CWO REZ, the Energy Corporation of NSW (EnergyCo) is planning new transmission network infrastructure, including high-capacity transmission lines and energy hubs, which will transfer power generated by solar and wind projects to electricity consumers.

Birriwa Solar will play an important role in achieving the objectives of the CWO REZ. It will also provide significant economic stimulus to the region through construction jobs and associated flow-on benefits.

For more information on the Central-West Orana REZ, visit www.energyco.nsw.gov.au/renewable-energy-zones/centralwest-oranarenewable-energy-zone

Source: NSW Government's Renewable Energy Action Plan (2013), Electricity Strategy (2019) and the Electricity Infrastructure Roadmap (2020)

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Solar Technology

Birriwa Solar will utilise solar photovoltaic (PV) panels similar to those used on rooftops around Australia. The PV panels are arranged in rows spaced several metres apart, on a single axis tracking system. The solar panels will follow or 'track' the movement of the sun through the day.

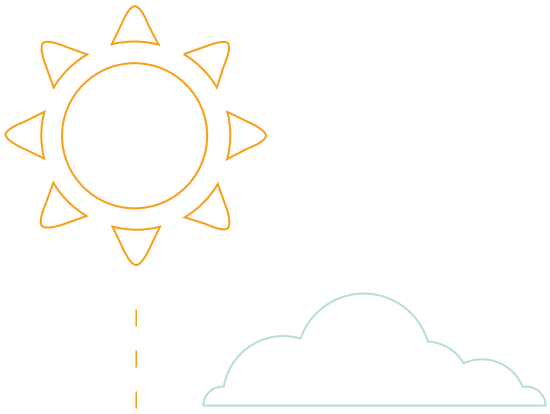
Based on preliminary designs, Birriwa Solar will involve

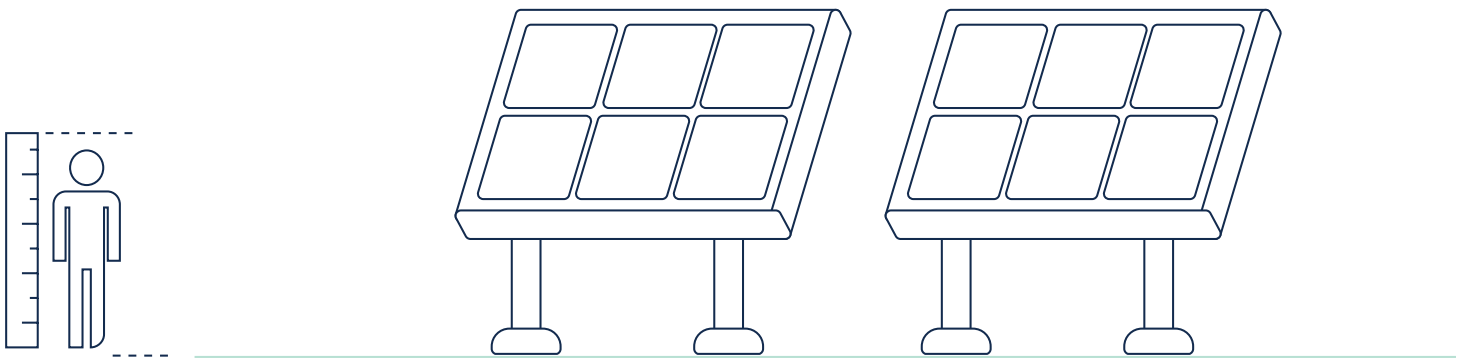
Arrays of PV modules, including inverters and an underground cable network

An on-site dedicated substation will connect the solar project to the electricity transmission network, as well as access points from the local road network and internal access tracks

Stock-proof security fencing around each of the solar fields to enable safe grazing for livestock such as sheep

ACEN Australia is proposing battery energy storage systems as part of its technical studies. Solar combined with battery storage will form a major component of Australia's mix of future energy generation.





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Project Assessments

A range of assessments has been undertaken to understand the benefits and impacts of the project.

Biodiversity

A key land use in the local area is agriculture, consisting primarily of sheep and cattle grazing and dry land cropping. As such, a large majority of the project area contains non-native vegetation and is largely cleared. Areas of native vegetation occur within and surrounding the project study area in the form of vegetation along local roads, creek lines and windbreaks. Biodiversity surveys have been undertaken at the site to ground truth available vegetation mapping and to conduct targeted flora and fauna surveys. The development footprint has been adjusted wherever it was possible to avoid any areas of high biodiversity value.

Aboriginal cultural heritage

An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared for the project in accordance with relevant regulations and guidelines.
This includes an archaeological survey and consultation with the Aboriginal community. We have been working with seven Registered Aboriginal Parties (RAPs) who have assisted and guided the methodology for the ACHA. The RAPs will remain involved throughout the development process as well as the construction stage. The archaeological survey took place from November 2021 and was completed in March 2022. The project development footprint has avoided most areas of cultural significance in consultation with the RAPs.

Noise

The impact of noise during the construction and operation of the project has been assessed as part of the Environmental Impact Statement (EIS).
A road traffic noise assessment has also been included in the EIS to assess noise impacts associated with project-related vehicle movements along the local road network during the construction phase of the project. All noise levels will be compliant with regulations and standards during construction and operation.

Hydrology

The potential impact of the project on local riparian waterways has been assessed in the EIS. Flood hazard identified within the development footprint will be considered in the Detailed Design prior to construction.
A specialist hydrology report has been prepared to understand these flood constraints and further identify mitigation measures to effectively protect waterways and avoid erosion across the site.

Traffic

The primary transport route to the site will be via Golden Highway and the Castlereagh Highway. The site access route underwent an options assessment review and was comprised of three options:

- Option 1 – two-way access via Barneys Reef Road and Birriwa Bus Route south
- Option 2 – two-way access via Birriwa Bus Route south only
- Option 3 – one-way access: in via Barneys Reef Road and out via Birriwa Bus Route south.

Option 1 was selected as the preferred route because it had lower environmental impacts, was a safer option and was also preferred by local residents. Consultation with the community and relevant government agencies, including Mid-Western Regional Council and Warrumbungle Shire Council, on the extent of proposed road upgrades is still ongoing.

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Timeline and Approvals

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It is being assessed as a State Significant Development under Part 4 of the NSW Environmental Planning and Assessment Act 1979. The NSW Department of Planning and Environment (DPE) is the state planning authority for the project.

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Project lifecycle

Phase 1
DEVELOPMENT
Complete

2019

Technical, environmental, cultural, social and economic assessments to inform approvals and permitting

Phase 2
CONSTRUCTION
2 years

2024

Construction of solar project and associated infrastructure

Phase 3
OPERATIONS
25+ years

2027

Birriwa Solar operational and generating renewable energy

ACEN Australia

ACEN Australia is the platform representing ACEN's renewable energy assets in Australia. It includes several solar, wind, battery, pumped hydro and energy storage projects across New South Wales, Tasmania, Victoria and South Australia in development and construction.

Our aim is to provide low cost, clean electricity in a socially and environmentally responsible way, using innovative technology solutions.

ACEN

ACEN is the listed energy platform of the Ayala Group. The company has ~3,800 MW of attributable capacity in the Philippines, Vietnam, Indonesia, India, and Australia. The company's renewable share of capacity is at 87%, among the highest in the region. ACEN's aspiration is to be the largest listed renewables platform in Southeast Asia, with a goal of reaching 5,000 MW of renewables capacity by 2025. Commitment to achieve net-zero greenhouse gas emissions by 2050.

ACEN has been a partner of UPC Renewables in Australia since 2018. In 2021, ACEN began a transaction to eventually own 100% of UPC\AC Renewables by early 2023; with this transaction, the company is now called ACEN Australia. This marks a strategic pivot for ACEN as it embarks on its first wholly owned development and operations platform outside of the Philippines.

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