Capricornia

Location
80km west of Mackay

Connection
18km of new transmission line

Generation
750 megawatts (MW)

Storage
12 gigawatt hours (GWh)

Capricornia Pumped Hydro Project

The proposed Capricornia Pumped Hydro Project will provide clean and reliable power to homes and businesses across Central Queensland and is an important part of a secure and affordable energy system for all of Queensland.

The proposed project area is 80km west of Mackay, on two properties that have been used for cattle grazing since the 1880s, which will continue alongside the proposed project.

The project team is currently undertaking field, environmental, engineering and technical studies to inform the project's Environmental Impact Statement (EIS). If approved, construction is expected to commence in 2026, with the project operational in 2031.

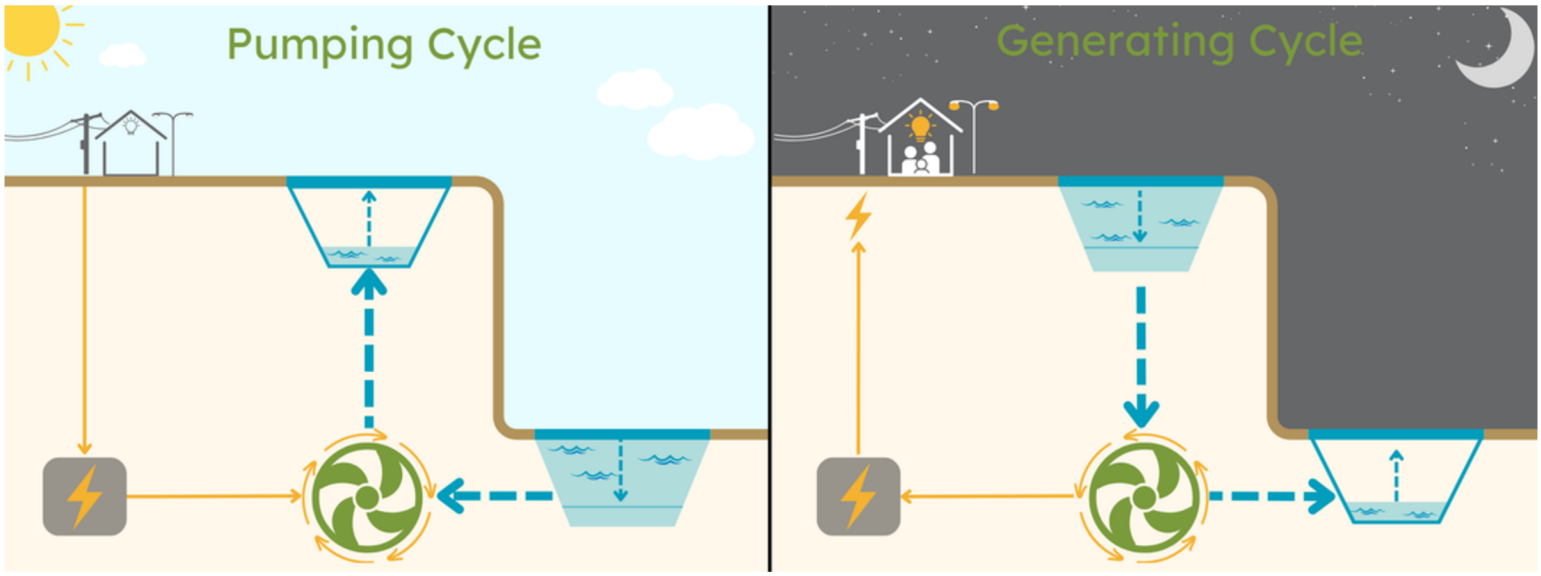
We are committed to working with the local community and providing lasting benefits through employment, procurement, and partnership opportunities during construction and ongoing operations. The project will create around 600 jobs during peak construction and 65 jobs during its operational phase.

What is pumped hydro?

Pumped hydro operates like a large battery, where water is moved between two reservoirs to either generate power (released from a 'upper' reservoir to a 'lower' reservoir) or to 'recharge' (water is pumped back uphill, from the 'lower' to 'upper' reservoir).

Pumped hydro will recharge at times when homes and businesses aren't using power (low demand) and will generate when those same homes and business need it most (high demand). This keeps the energy system stable and helps to integrate and support existing and newer forms of energy generation, including renewables. The below diagram shows the two cycles of a pumped hydro system - pumping and generating.

Unlike other forms of power generation technologies, a pumped hydro system can be turned on and off relatively quickly and can operate across a range of weather conditions, meaning it can work during times when it is needed most.



Capricornia Pumped Hydro and Transmission Line Project

Capricornia will dispatch enough energy to meet about 4% of Queensland's total energy demand, generating 750MW of power, with a storage capacity of 12GWh, or around 16 hours.

The project will comprise two reservoirs:

- the upper reservoir will be created by filling an existing valley
- the lower reservoir will be an 'in-stream' reservoir on the Broken River, downstream of Sunwater's existing Eungella Dam.

There will also be a powerhouse and waterway tunnels linking the reservoirs and the powerhouse.

The Capricornia Pumped Hydro project will connect to the existing high voltage transmission line from Strathmore to Nebo via a substation and 18km of new transmission line.

Project timeline

Approvals process

The project is being assessed as a coordinated project, led by the Office of the Coordinator-General (OCG), which integrates both state and federal requirements. This includes an EIS under the Queensland State Development and Public Works Organisation Act 1971. The final EIS Terms of Reference were published on September 27, 2024. The project has been determined as a 'controlled action' by the federal government under the Environmental Protection and Biodiversity Conservation Act 1999.

Community feedback

Community engagement, participation, and feedback is an important part of everything we do. Since 2019 we have engaged the community and regional stakeholders through town hall and drop-in sessions, briefings, e-news and one-on-one engagements. Feedback from these discussions has directly informed our project design and environmental studies.

We will continue to work with the community and regional stakeholders through every stage of the project. This includes upcoming activities, milestones, and opportunities to participate and contribute.

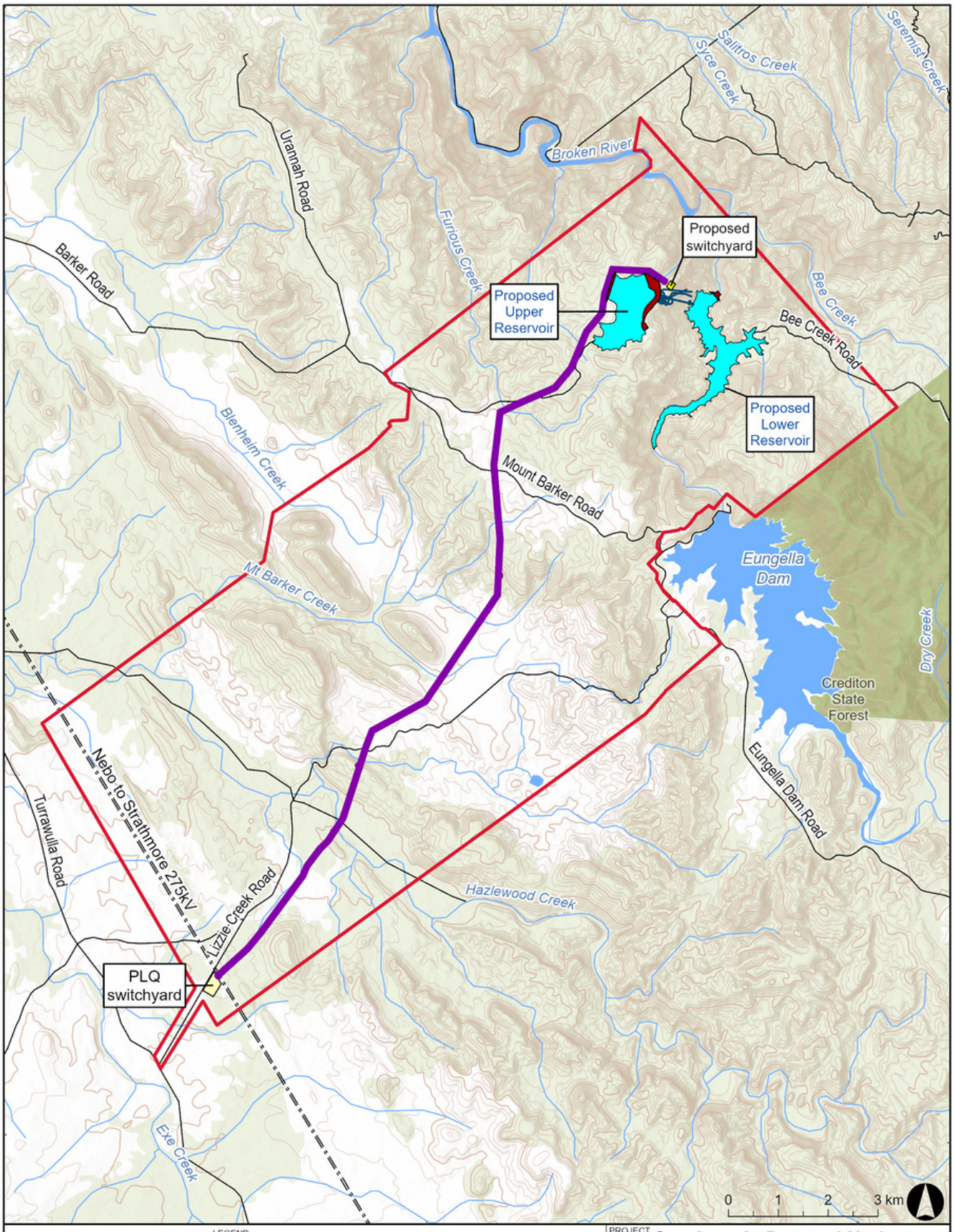
Sign up to our project mailing list on our website to stay up-to-date and find out how to get involved.

capricorniaenergyhub.com.au 1800 979 686 info@capricorniaenergyhub.com.au

LEGEND

- Capricornia Pumped Hydro and Transmission Project
- Major road
- Major watercourse
- Protected areas
- Built up areas

PROJECT	Capricornia Pumped Hydro and Transmission Project
TITLE	Project locality
DATE	2/05/2025
STATUS	DRAFT
PRODUCED	MVC
SCALE	1:700,000 at A3
DATUM	GDA 1994 MGA Zone 55
REV	D
FILE	CEH-EPBC-PHES - FIG 1_1 LOCALITY - rD
FIG	1.1



LEGEND

- Project area
- Proposed dam walls
- Proposed pumped hydro reservoirs
- Underground infrastructure (powerhouse, head/tail race, tunnels)
- Proposed transmission corridor
- Proposed switchyard
- Proposed substation
- Existing transmission powerline
- Existing road

PROJECT: **Capricornia Pumped Hydro and Transmission Project**

TITLE: Project Area and Proposed Layout

DATE	STATUS	PRODUCED
2/05/2025	ISSUED FOR INFORMATION	IM

SCALE	DATUM
1:100,000 at A3	GDA 1994 MGA Zone 55

FILE	FIG
CEH IAS - FIG 2 GENERAL ARRANGEMENT - IFI D	2

Frequently asked questions (FAQs)

Is the project publicly funded?

The project is privately owned and is pursuing a commercial power and capacity usage arrangement with a government owned corporation.

Why was this location chosen for pumped hydro?

During project origination, eight sites in the region were investigated and assessed based on capital cost, accessibility, sustainability, ecological sensitivity, environmental values and ability to meet project needs. The selected site offered the best balance of technical suitability for pumped hydro and the lowest potential impact on the surrounding environment.

The land is primarily used for cattle grazing and is sparse ironbark woodland. Importantly, the proposed project does not impact on internationally important wetlands (Ramsar wetland) or the Great Barrier Reef. The Burdekin catchment connects with the ocean over 300km away from the project site. The project is not located in the rainforest typically associated with the Clarke or Eungella ranges and is approximately 3km away from Crediton Forest Reserve, 6km from Crediton State Forest and 9km from Eungella National Park.

The proposed lower reservoir of the pumped hydro will be located approximately 6km downstream of the existing Eungella Dam, on the Broken River. Aquatic fauna in the project area is limited due to the prior modification of water flows. The river is made up of natural rock barriers, so the habitat for aquatic species within the lower reservoir is marginal and the river remains dry for extended periods.

The upper reservoir is located 300m in elevation above the lower reservoir on the high country west of the Broken River and sits within a wide undulating valley. The land is made up of grassy rolling terrain with small gullies, and sparse trees.

The site's proximity to Powerlink's existing high voltage transmission network, access to water from Eungella Dam, and connection to the region's existing transport network and skilled workforce, built up by the existing mining sector, offer significant advantages for the successful delivery of the project.

We recognise that the project will have some environmental impacts however, selecting this location for the project allows us to minimise those impacts while also contributing to Queensland's energy goals.

Are other renewable technologies, such as a wind or solar farm, being built as part of this project?

Only the pumped hydro and transmission line are currently proposed as part of the project. The project will comprise two reservoirs with tunnels linking to an underground powerhouse, a transmission line, substation and supporting infrastructure such as roads and temporary workers accommodation. Other renewable energy technologies, such as wind and solar, are not included in the project's scope, and are not being considered as part of the EIS process.

Any proposals for development of other infrastructure would require separate community consultation, assessments and approvals outside of the current pumped hydro and transmission project scope.

Why has the project name changed?

The project was originally named the Capricornia Energy Hub to reflect a broader plan that included various renewable energy technologies, such as wind and solar. This is why residents near the project may see environmental monitoring activities on site, including a meteorological mast.

Currently, the project includes only the pumped hydro and transmission line, so we've updated the name to Capricornia Pumped Hydro. This adjustment provides greater clarity and ensures the project name accurately represents its scope.

What measures will be in place to mitigate environmental impacts?

From the outset, we have prioritised reducing environmental impacts through careful site selection and design development, avoiding sensitive environmental areas wherever possible. As the project progresses, we continue to focus on minimising potential impacts through thoughtful planning, design, and mitigation strategies. When impacts can't be fully avoided, we are focusing on reduction and mitigation, and as a last resort, any residual impacts will be offset.

Environmental studies and field surveys have been undertaken at the project site to understand existing conditions and inform the design process. These findings, along with feedback gathered through ongoing community engagement, have shaped our approach to managing potential impacts. A comprehensive range of monitoring and management measures will be outlined in the EIS.

We are continuing to engage with stakeholders and the broader community, and we welcome opportunities to discuss our findings and approach ahead of the EIS release. Our commitment to regulatory standards, transparent communication, and long-term sustainability will help ensure the project delivers positive outcomes for both the environment and the community.

Will there be impacts to platypus or Irwin turtle habitat?

We share the community's desire to protect platypus and Irwin turtles. To date, our extensive studies have shown no platypus or Irwin turtle occurrence within the project area. The draft EIS will include more information along with a detailed assessment of the likelihood of occurrence for both species.

The rocky nature of the Broken River at this location prevents platypus denning and breeding, and the project location is too far upstream to include habitat of the Irwin turtle.

Do you have support from Traditional Owners?

We reached and signed an Indigenous Land Use Agreement (ILUA) with the Widi People in 2022 and the ILUA has been formally registered.

Outside of this formal process, the project team are continuing to look for ways to adopt strategies that address historical exclusions, ensure cultural preservation, and align with the Widi's aspirations for sustainable development and economic empowerment. Widi Cultural Heritage Monitors are regularly invited to be present on-site during any ground disturbance activities, ensuring that any cultural findings are managed appropriately and respectfully by the Traditional Owners. We are also working with the Widi People throughout the EIS process to ensure that traditional knowledge and methods are incorporated into our environmental protection and offset management strategies.

Our consultation with the Widi People emphasises the necessity of a partnership model that respects cultural values, integrates traditional knowledge, and promotes shared benefits.

Will you buy private land for the project?

The project is located on two large rural landholdings primarily used for cattle grazing. The project team have been working collaboratively with the landowners and leaseholders to find the best solutions for all parties.

No other landholdings are proposed to be directly impacted by the project. The project will not require any compulsory acquisition.

Where will the temporary workforce accommodation camp be located?

We are currently exploring a range of options for the location of our temporary workforce accommodation camp. This will be confirmed in the EIS. The temporary camp will need to be located near the project site and will be in operation for the full duration of the construction period.

Will my water entitlements be impacted?

Downstream water user entitlements will not be impacted by the project, and this has been demonstrated by modelling to determine compliance with the water plan. The project team are developing a water strategy based on Resource Operating Licences (ROLs) as key planning instruments to authorise operation of water infrastructure in each project phase (construction, commissioning).

The ROL and associated operation manual(s) will set the rules for diverting water to and releasing water from upper and lower reservoirs. The project will be required to demonstrate that the water strategy achieves outcomes and objectives of the Burdekin Basin Water Plan. The project team will continue to engage with the Department of Local Government, Water and Volunteers and Sunwater to ensure the project water strategy is consistent with their expectations and requirements.

How will you access the site for construction and operation?

We are in the process of finalising our transport study which will provide us with a short list of feasible transport routes. To build a project of this size requires large machinery which will be delivered via the Port of Mackay or Port of Townsville. At this stage, we expect the large equipment will come from the Port of Mackay to Nebo via the Peak Downs Highway and then into the project site via the Suttor Development Road, Turrawulla Road and Lizzie Creek Road. We do not intend to bring large pieces of machinery through Eungella township or Eungella National Park.

The project team is working directly with local landholders and councils on the final transport routes, which will be subject to regulatory approval.

What is an EIS and when will I be able to read the draft EIS for this project

An EIS is a detailed assessment that evaluates the potential environmental, social and economic effects of a proposed project. It helps government regulators and the public understand the impacts and measures in place to mitigate any negative effects before a project proceeds. The draft EIS for the project is expected to be available for public display and comment in late 2025 prior to final assessment and subsequent approvals.

Have another question?

Visit our website to find out more