Project fact sheet

Borumba Pumped Hydro Project

About the project

Lake Borumba Dam, near Imbil southwest of Gympie, is being investigated for future pumped hydro.

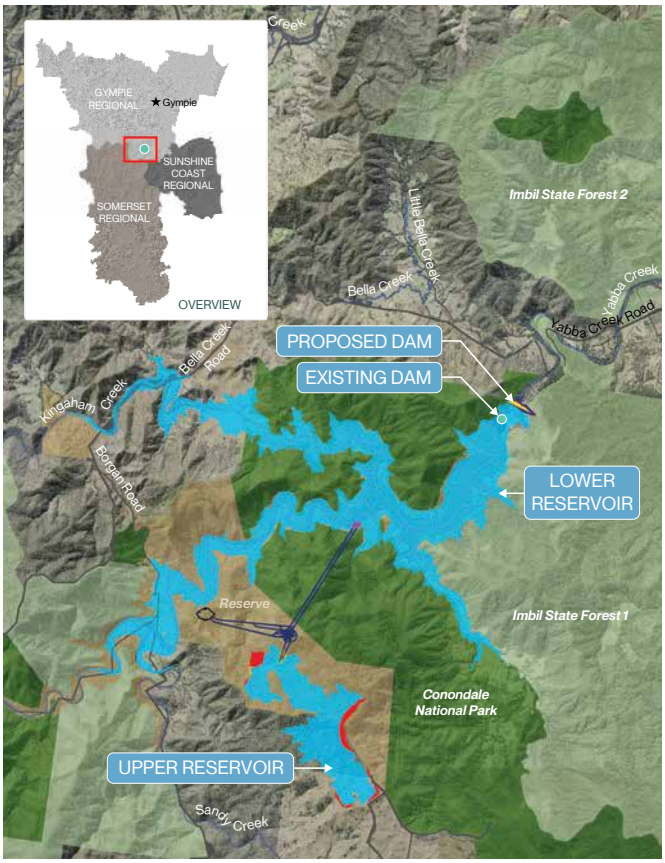
Pumped hydro storage will play a vital role in the move to renewable energy and will ensure that energy in Queensland remains affordable, reliable and secure for our communities.

The existing dam infrastructure at Lake Borumba is well-situated in the electricity network to support the development of renewable energy production in the Southern Queensland Renewable Energy Zone.

The Borumba Pumped Hydro Project will be capable of dispatching 2,000 MW and storing up to 24 hours of energy. When generating, the project will have the capacity to supply electricity to up to 2 million Queensland homes.

The development of a pumped hydro energy storage (PHES) at Lake Borumba requires expansion of the existing lower reservoir (Lake Borumba) and a new dam to be constructed at a higher altitude to create an upper reservoir. An underground powerhouse would link the two reservoirs to enable water to be pumped from the lower reservoir to the upper reservoir, and for water released from the upper reservoir to drive turbines to generate electricity.

The Queensland Government committed $35 million to investigative studies to inform an investment decision for the Borumba Pumped Hydro Project. These studies were completed early 2023.



What is pumped hydro?

Pumped hydro is a proven technology. Long duration pumped hydro has the scale, operational flexibility, and low energy costs necessary to ensure the ongoing security and reliability of supply for Queensland's future clean electricity system with high levels of wind and solar generation.

Pumped hydro allows for renewable energy to be stored and dispatched at times when the sun isn't shining and the wind isn't blowing.

Rather than shifting energy between places – pumped hydro allows us to shift energy between times. This will become increasingly important as the share of renewables in Queensland's energy system grows to continue to provide a stable and reliable energy system for Queensland.

Long duration pumped hydro assets are able to supply power over a 24 hour period, or longer. Long duration pumped hydro stores energy while renewable generation is plentiful and discharges it when there is insufficient generation to meet demand. Long duration storage can also provide intra-day storage benefits, along with the ability to deal with extended solar and wind droughts.

Detailed studies being carried out

Queensland Hydro is conducting engineering, geotechnical, environmental, social and economic studies as part of state and federal environmental approval processes for the Borumba Pumped Hydro Project.

Environmental and social impact studies

Environmental and social impact studies will assess the project and address potential options to minimise and offset impacts during construction. Studies will include flora and fauna surveys and cultural heritage assessments.

Geotechnical studies

Geotechnical studies provide increased understanding of the underground conditions which will inform engineering requirements for dam foundations, tunnels and the underground power station.

Hydrological studies

Hydrological studies will assess the sustainable yield of the Yabba Creek catchment, timeframes for filling of the reservoirs, reliability of the pumped hydro once operational, impact on other water users, and the impact of climate change on the pumped hydro project.

Engineering design studies

Engineering design studies will include dam type and location, tunnel design, pump and turbine selection, and auxiliary infrastructure such as connection to the electricity transmission network.

Financial studies

Financial studies will provide more accurate estimates of the expected total cost of the pumped hydro. Financial assessment will enable the Queensland Government to maximise the economic benefits to the state and local area.

Field studies

Field studies commenced in 2022 and will continue to occur over the course of 2023. The team will be undertaking a wide variety of field studies for the project including terrestrial and aquatic ecology surveys, hydrology, and groundwater, geomorphology and geotechnical studies.

Next steps

Queensland Hydro has finalised the detailed analytical report (DAR) for the Borumba Pumped Hydro Project. The DAR was provided to the Queensland Government in early 2023 for consideration and investment decision. If the project proceeds, two new transmission lines will be built to connect the pumped hydro facility to the existing transmission network via the Woolooga and Tarong/Halys substations.

Further development of the project will follow an environmental approval process from state and federal governments, like any other large-scale infrastructure project. The target is to have the project operating by the end of the decade.

Opportunity to get involved

Community and stakeholder engagement is a key priority for the project. Queensland Hydro is committed to engaging early and often with the community and key stakeholders to achieve the best outcomes for both Queensland and local communities.

Throughout the project, the community and stakeholders will have opportunities to learn more about the project and provide feedback. Queensland Hydro is engaging through targeted stakeholder meetings and broader community drop-in sessions. Drop-in sessions been held in December 2021, April 2022, July 2022, and November 2022. Further drop-in sessions will be held throughout 2023.

The project team also meet regularly with a stakeholder reference group, which was established to collect feedback and share information about the project. The stakeholder reference group is made up of stakeholder representatives from business, community and environmental groups.

We encourage landholders, community and other stakeholders to provide local insights and feedback on the project through our communication channels.

Get in touch

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