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Brierly Basin floating solar project

We're working to reduce our greenhouse gas emissions and lower the cost of electricity to provide better outcomes for our customers and the environment.

The installation of a solar energy system at Warrnambool's Brierly Basin is our latest project. More than 1,200 panels will float on the water in the largest array of its type in Australia.

About the project

Brierly Basin is a raw water storage that holds water sourced from the Otways and from our roofwater harvesting scheme.

We use a lot of electricity to pump the water stored in Brierly Basin up to the Warrnambool Water Treatment Plant, making on-site solar a very attractive alternative.

Usually solar panels are mounted on a roof or the ground, however floating solar is a better option for this site because of the large area of open water available.

We'll be installing more than 1,200 of the latest "bi-facial" solar panels which harvest light from both sides of the panel, increasing their efficiency and making them easier to maintain.

The panels will be placed on pontoons similar to those found on jetties throughout South West Victoria. They will include integrated walkways allowing access for specialist contractors when required.

Special cables will secure the floating array to anchors placed at the bottom of the reservoir. The anchoring system has been designed to allow the pontoons to rise and fall with the changing level of the reservoir.

We've produced some mock-up images (below and overleaf) of what the floating array may look like. The water level in the basin is below the embankment, meaning the panels will only be visible from nearby elevated areas.





The figures

The system will be our largest to date, producing 500kWp DC (0.5MW) - twice the power of the system we previously installed at our Warrnambool Water Treatment Plant (250kWp).

More than 400 floating solar PV systems have been installed worldwide but this will be the first of its type for the Australian water sector. Nationally, there are two smaller floating solar arrays - a 30kW system in South Australia and a 100kW system in Lismore, New South Wales. At 500kW, ours would be the largest in Australia.

It will also be one of the largest solar PV installation in our region, Wannon Water's largest solar project, and our second largest renewable energy project.

You can watch a two-minute video of a similar but much larger system at the Godley Reservoir near Manchester: <https://www.youtube.com/watch?v=UVowDUVYVDA>

Reducing costs and emissions

The business case shows that the project is expected to have a net-positive value to Wannon Water of more than \$500,000, and significantly reduce electricity charges at the Brierly Basin site.

The project will generate more than 600,000 kWh/year of renewable electricity and reduce our greenhouse gas emissions by more than 600 tonnes per year.

Other potential benefits include a reduction in sunlight entering the water, helping to minimise algae growth, and reduced evaporation from the surface.

Technical and safety considerations

Powercor has provided provisional pre-approval for a solar PV array of up to 500kW power at the site.

The floats are made from high-density polyethylene which has been used in the manufacture of water pipes for more than 50 years so there is no risk to water quality.

The solar array and associated electrical connections will be assembled on the bank of the reservoir in a row-by-row manner. As each row is completed, the array will be slid onto the reservoir. Technicians will not need to work over the water.

Further information

Head to our website at wannonwater.com.au, email info@wannonwater.com.au or call 1800 926 666.