

# Mackintosh Power

## Station

### Pieman Catchment

Mackintosh Power Station is located at the foot of Mackintosh Dam which forms Lake Mackintosh, the principal storage of the Pieman River Scheme. Lake Mackintosh is fed from both the Mackintosh River and Sophia Tunnel from Lake Murchison downstream of Tribute Power Station.

Commissioned in 1982, the station houses a single 81 MW Fuji Francis turbine coupled to a 94 MVA Fuji generator. From 2015–2018 the original excitation and governor systems have been upgraded, supporting the machine until it undergoes a major modernisation around 2024.

The umbrella-type generator is supported by a steel support cylinder, concrete columns and the generator floor. This provided early access to the turbine during construction and improved access for maintenance. The turbine is connected to a 200 metre long power tunnel with vertical lift, gravity closed intake gate designed to cut off full flow. No inlet valve is installed in the station.

Mackintosh has a rock-filled concrete dam with a power tunnel supplying water to the turbine via a half embedded spiral casing.

There is a draft tube gate is provided inside the station. A manually operated riparian valve, located in the diversion tunnel, is used to control water flow into the Mackintosh River downstream of the station when the power station is not operating.

The station output is fed to TasNetworks' transmission grid via a 13.8 kV/110 kV generator transformer and 110 kV outdoor switchgear.

#### Fast facts

<b>Scheme:</b>	Pieman
<b>Year commissioned:</b>	1982
<b>Power station structure:</b>	The station is 35 m long x 23 m wide with the service block next to the assembly and machine bays.
<b>Static head:</b>	70 m
<b>Generating set:</b>	Vertical shaft generating set, comprising an 81 MW Francis turbine directly coupled to a 3-phase, 50 Hz, 94 MVA synchronous generator and with provisions for synchronous compensator operation.
<b>Turbine manufacturer:</b>	Fuji
<b>Generator manufacturer:</b>	Fuji
<b>Rated head:</b>	61 m
<b>Rated output:</b>	94 MVA
<b>Rated discharge:</b>	150 m <sup>3</sup> /s
<b>Power factor:</b>	0.85
<b>Rated speed:</b>	167 rev/min
<b>Rated voltage:</b>	13.8 kV



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