

Butlers Gorge

Power Station

Derwent Catchment

Butlers Gorge Power Station is first in the Derwent Scheme. The station was commissioned in 1951 and houses an English Electric turbine coupled to an English Electric generator.

The power station is located at the foot of Clark Dam which forms Lake King William. The water from Lake King William also supplies Tarraleah Power Station via two canals. The machine at Butlers Gorge can be coupled to the regulating valves from either canal. This is to ensure water flow to Tarraleah Power Station is maintained in the event of a machine trip.

Directly behind the station building, the dam gallery houses three conduits that deliver water through the dam.

The first conduit delivers water to No. 2 discharge regulator. The second delivers water to the machine, and the third tees off to deliver water to No. 2 Canal via Nieterana mini hydro or to No. 1 discharge regulator. Downstream of Butlers Gorge Power Station Wally's Weir directs water into No. 1 Canal, or allows it to spill into the Derwent River.

The station building houses a single alternator and the turbine has a fully embedded spiral casing with water flow controlled via a butterfly type valve. It also houses a 125 kVA diesel generator for alternate station services supply when needed.

Butlers Gorge is one of the main headwater storages for the Nive and Derwent River Catchments and releases water to a further seven stations downstream.

The station output is fed to TasNetworks' transmission grid via three 11 kV/110 kV single-phase generator transformers and 110 kV outdoor SF6 dead tank switchgear, which can be remotely opened.

Fast facts

Scheme:	Lower Derwent / Nive
Year commissioned:	1951
Power station structure:	<ul style="list-style-type: none"> • 38 m long x 16 m wide • A single generating set with two diversion regulating valves
Static head:	56.1 m
Generating set:	<ul style="list-style-type: none"> • Vertical shaft generating set • A 12.2 MW Francis turbine directly coupled to a 3-phase, 50 Hz, 15.25MVA synchronous generator
Turbine manufacturer:	English Electric
Generator manufacturer:	English Electric
Rated head:	49 m
Rated output:	15.25MVA
Rated discharge:	30 m ³ /s
Power factor:	0.8
Rated speed:	250 rev/min
Rated voltage:	11 kV

