Meadowbank Power Station

Derwent Catchment

Meadowbank Power Station is the last power station in the Lower Derwent / Nive Scheme. It was commissioned in 1967 and houses a single Andritz Kaplan turbine coupled to a Siemens generator.

The power station consists of a concrete slab and buttress dam, intake structure with intake gate designed to cut off full flow and a short penstock which is integral to the dam. The dam has two crest gates for controlling flood levels upstream.

The turbine has a five-bladed runner and concrete spiral casing. Pre-stressed cables passing through the stay vanes anchor the spiral casing and form part of the station foundation. No inlet valve is installed in the power station.

As part of the Kaplan program, the power station underwent a full modernisation and refurbishment in 2015. This included an upgrade to a new more efficient Andritz design, as well as new digital control, excitation and protection systems.

A riparian outlet valve is installed to control water flow past the power station when it is not operating, providing regulated environmental flow into the Derwent River.

The power station output is fed to the transmission grid via parallel 11 kV/110 kV generator transformers and associated 110 kV outdoor switchgear. The transformer yard is next to the station with a separate switchyard shared with TasNetworks containing the 110 kV circuit breaker.

Fast facts	
Scheme:	Lower Derwent / Nive
Year commissioned:	1967
Power station structure:	• 33 m long x 21 m wide • Assembly bay and service block next to a deep-set, sip-formed circular machine bay
Static head:	29 m
Generating set:	• Vertical shaft generating set • 43.8 MW Kaplan turbine • Turbine coupled to a 3-phase, 50 MVA synchronous generator
Turbine manufacturer:	Andritz
Generator manufacturer:	Siemens
Rated head:	26 m
Rated output:	50 MVA
Rated discharge:	162 m3/s
Power factor:	0.8
Rated speed:	150 rev/min
Rated voltage:	11 kV

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