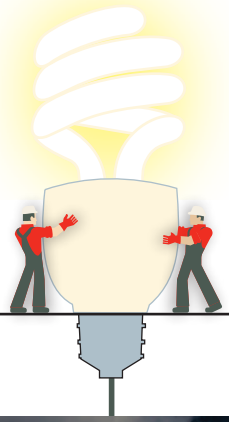
Meadowbank Power Station

Derwent Catchment

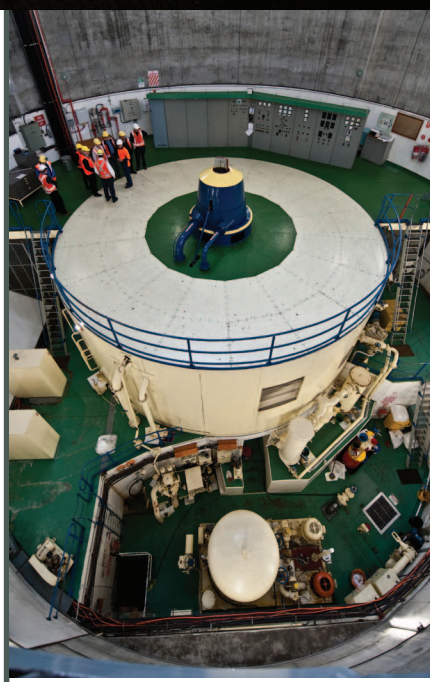


Meadowbank Power Station is the tenth and last station in the Nive/Derwent scheme. The station was commissioned in 1967 and houses a single Boving kaplan turbine turbine coupled to a Siemens generator.

The facilities at Meadowbank are simple and include a concrete slab and buttress dam, intake structure with intake gate designed to cut off full flow, a short penstock which is integral with the dam, the power station building, generator equipment and associated facilities.

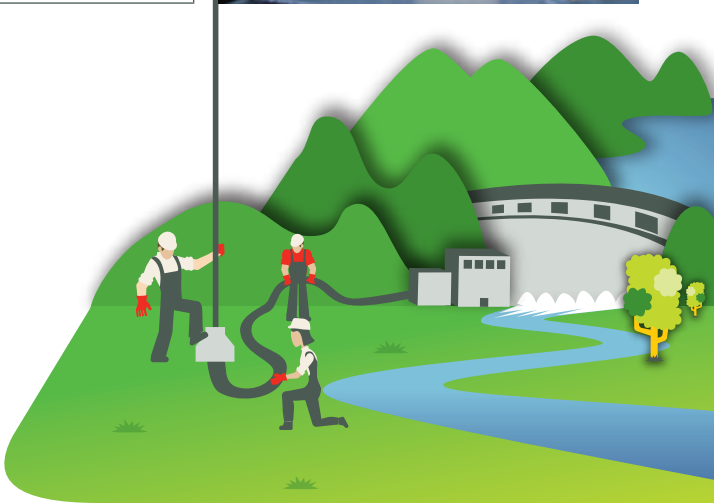
The dam has two crest gates for controlling flood levels upstream. The turbine has a five-bladed runner and concrete spiral casing. Pre-stressed cables passing through the stay vanes anchor the spiral casing and form part of the station foundation. No inlet valve is installed in the station. Discharge is into the Derwent River.

A riparian outlet valve is installed to control water flow into the Derwent River when the station is not operating.



The 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 situated adjacent to the station with a separate switchyard a short distance away containing the 110 kV circuit breaker. The switchyard is a shared asset with Transend Networks.

Scheme:		Lower Derwent	
Year commissioned:		1967	
Power station structure:		Surface, 33 m long x 21 m wide with the assembly bay and service block adjacent to a deep set, sip formed circular machine bay.	
Static head:		29 m	
Generating set:		Vertical shaft generating set comprising a 41.8 MW kaplan turbine directly coupled to a 3-phase, 50 Hz MVA synchronous generator.	
Turbine manufacturer:	Boving	**Generator manufacturer:**	Siemens
Rated head:	26 m	**Rated output:**	50 MVA
Rated discharge:	162 $m^{3/s}$	**Power factor:**	0.8
Rated speed:	150 rev/min	**Rated voltage:**	11 kV



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