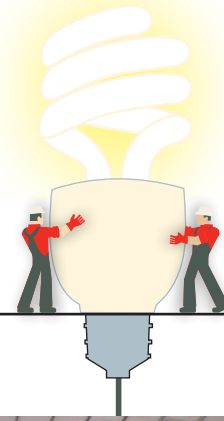


# Gordon Power Station

## Gordon Catchment



Gordon Power Station is the only station on the Gordon/Pedder scheme. The station was commissioned in 1977 with two machines. A third machine was commissioned in 1988. All three machines are Fuji turbines coupled to Siemens alternators.

Gordon Power Station is located 183 metres underground and is supplied with water from Lake Gordon through a 137 metre-high vertical shaft. Water from the station is returned to the Gordon River through a 1.6 kilometre-long tailrace tunnel.

Lake Gordon's major inflow is from Lake Pedder. A radial gate controls water flow on a canal between the lakes. A gate situated on Lake Pedder at Serpentine Dam controls water release into the Huon River.

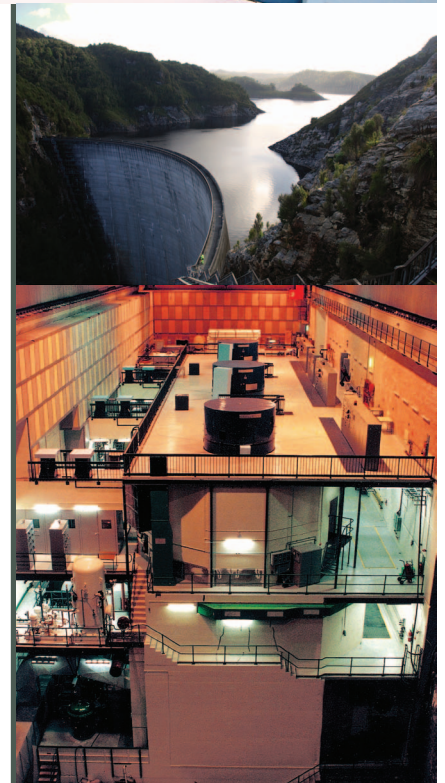
Each turbine has a fully embedded spiral casing with spherical rotary inlet valve, and is connected to a common power shaft intake with a vertical lift, gravity-closed cylindrical intake gate designed to cut off full flow.

Unit 3 is capable of synchronous condenser operation and has a turbine water blow down system installed to enable operation in this mode.

A single draft tube gate is provided for all the machines. It can be lowered into a slot below each machine and can be removed while other machines are operated under load. Twin 90/10 tonne overhead travelling cranes are provided which together can handle a fully assembled stator.

There is a standby 750 kVA house-set located in the basement floor of the station which is water turbine driven. There is also an emergency 585 kVA diesel generator located in the control building.

The station output is fed from each machine by 18 kV aluminium busbars to the surface switchyard then passes through three 18/220 kV power transformers and 220 kV outdoor switchgear to Transend Networks' transmission grid. The switchyard also houses 22 kV apparatus used for power supply to the station and to the local community.



<b>Scheme:</b>		Gordon	
<b>Year commissioned:</b>		1977/1988	
<b>Power station structure:</b>		Underground, 96m long x 22 m wide x 28 m high sized to house 5 generating sets with assembly and services bay, and with a vertical busbar/lift shaft to a surface control building and transformer yard.	
<b>Static head:</b>		200m	
<b>Generating set:</b>		Three vertical shaft generator sets each comprising a 150 MW francis turbine directly coupled to a 3-phase, 50 Hz, 160 MVA synchronous generator. No. 3 machine is designed for synchronous compensator operation.	
<b>Turbine manufacturer:</b>	Fuji	<b>Generator manufacturer:</b>	Siemens
<b>Rated head:</b>	192m	<b>Rated output:</b>	160 MVA
<b>Rated discharge:</b>	85 m <sup>3</sup> /s	<b>Power factor:</b>	0.9
<b>Rated speed:</b>	273 rev/min	<b>Rated voltage:</b>	18 kV

