

# Trevallyn Power Station

## Greak Lake - South Esk Catchment



Trevallyn Power Station, which is located only five kilometres from the centre of Launceston (the major town in northern Tasmania), was commissioned in 1955. A dam on the South Esk River diverts water through a 3.2 kilometre tunnel to the station. Water is discharged into the Tamar River at sea level by an open tailrace channel. Trevallyn is a run-of-river station making use of daily flows down the South Esk River.

The station contains four vertical-shaft generating sets comprised of two 20.9 MW francis turbines directly coupled to 3-phase, 50 Hz, 25 MVA synchronous generators and with provisions for synchronous compensator operation. There are also two 27 MW francis turbines directly coupled to 3-phase 50 Hz, 30.6 MVA synchronous generators.

The turbines have fully embedded spiral casings. A main inlet valve is located in the station immediately upstream of each turbine for maintenance and security purposes. No. 1 and no. 2 machines are equipped with a turbine relief (bypass) valve to reduce pressure rise in the turbine and penstock during rapid guide vane closure.

The station electrical output is fed to the 11 kV bus system then on to the two 11 kV/110 kV 3-phase generator transformers located in the station switchyard and then on to Transend Networks transmission grid.



<b>Scheme:</b>		South Esk Catchment	
<b>Year commissioned:</b>		1955	
<b>Power station structure:</b>		Surface, 72 m long x 14 m wide sized to house four generating sets with assembly bay. A two storey services block including control wing and workshop is annexed to the machine and assembly bay.	
<b>Static head:</b>		127 m	
<b>Generating set:</b>		Four vertical shaft generating sets, two comprising a 20.9 MW francis turbine directly coupled to a 3-phase, 50Hz, 25 MVA synchronous generator and with provisions for synchronous compensator operation and two comprising a 27 MW francis turbine directly coupled to 3-phase 50Hz, 30.6 MVA synchronous generator.	
<b>Turbine manufacturer:</b>	English Electric	<b>Generator manufacturer:</b>	2x Alstom 2x English Electric
<b>Rated head:</b>	41 m	<b>Rated output:</b>	25 MVA / 30.5 MVA
<b>Rated discharge:</b>	21 m <sup>3/s</sup> /28m <sup>3/s</sup>	<b>Power factor:</b>	0.8 / 0.87
<b>Rated speed:</b>	375 rev/min	<b>Rated voltage:</b>	11 kV

