

# Devils Gate

# Power Station

## Mersey-Forth Catchment

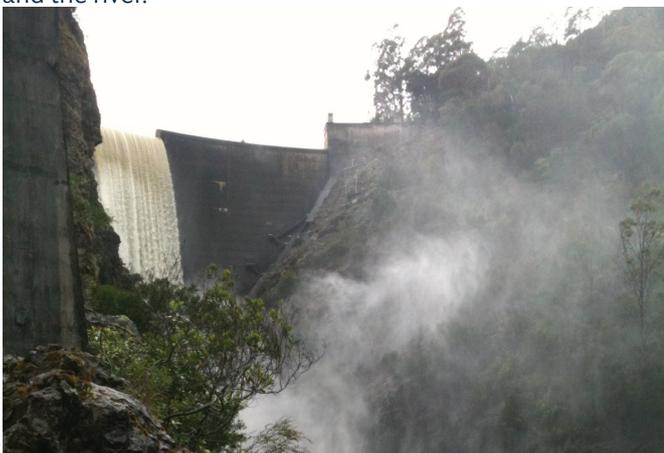
Devils Gate Power Station is the sixth station in the Mersey-Forth Scheme with storage fed by the outflows from Cethana and Wilmot power stations. The power station was commissioned in 1969 and houses a single Boving Francis turbine coupled to a Siemens generator.

The facilities at Devils Gate are a double arch concrete dam (which forms Lake Barrington), the site features an intake structure housing an intake gate designed to close against the rated flow through the power station.

The machine features a unique bearing arrangement with separate thrust and guide bearings. The turbine has a partially embedded spiral casing with no relief valve or inlet valve.

The machine began a full modernisation in late 2018, upgrading the turbine, and adding a digital governor, excitation and unit controller. The modernisation also included primary equipment including a replacement circuit breaker.

The power station output is fed to TasNetworks' transmission grid via two 3-phase 11 kV/110 kV generator transformers and outdoor switchyard. Due to limited space at the power station site the switchyard has been situated on rock ledges at three levels between the station and the river.



### Fast facts

<b>Scheme:</b>	Mersey-Forth
<b>Year commissioned:</b>	1969
<b>Power station structure:</b>	<ul style="list-style-type: none"> <li>• 32m long x 17m wide</li> <li>• Service block next to the assembly</li> </ul>
<b>Static head:</b>	69 m
<b>Generating set:</b>	Vertical shaft generating set: <ul style="list-style-type: none"> <li>• 63 MW Francis turbine</li> <li>• Directly coupled to a 3-phase, 50Hz, 75MVA synchronous</li> <li>• Provisions for synchronous compensator operation</li> </ul>
<b>Turbine manufacturer:</b>	Boving
<b>Generator manufacturer:</b>	Siemens
<b>Rated head:</b>	68 m
<b>Rated output:</b>	75 MVA
<b>Rated discharge:</b>	102 m <sup>3</sup> /s
<b>Power factor:</b>	0.8
<b>Rated speed:</b>	167 rev/min
<b>Rated voltage:</b>	11 kV

