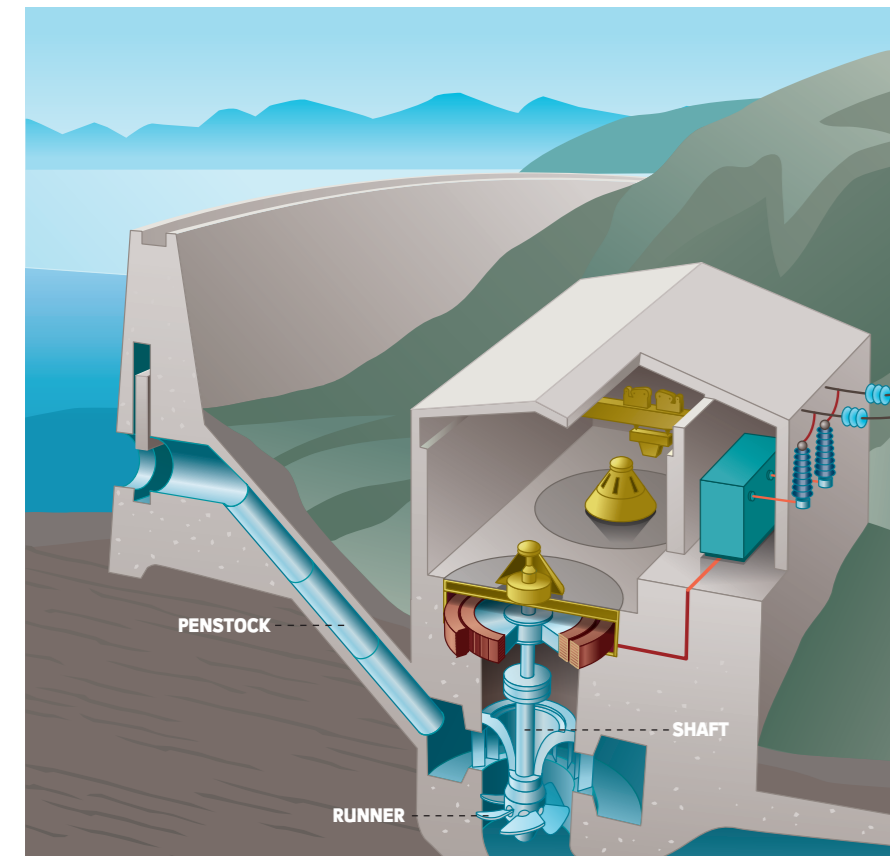


HOW ELECTRICITY IS PRODUCED



The water is held in the reservoirs, from where it is released into the tunnel towards the power station. Water comes into the station through a tube of pipe called the penstock. When generating, water flows through the penstock and past the ball valve, into the spiral casing where the runner is located. Once the pressure has equalled out in the spiral casing the guide veins are opened to allow the water to turn the runner.



The water then turns the runner which turns a shaft. The shaft turns the magnets of the generator, and these are surrounded by the coil of copper wire. This is where electricity is generated at 11,000 volts. From here it is taken to the transformer via cables. At the transformer it is stepped up to 33,000 volts and sent to the substation at Rhydlydan.

From the substation there are four lines, three that supply Aberystwyth and surrounding area and one that gets stepped up to 132,000 volts and sent to Swansea to the national grid.

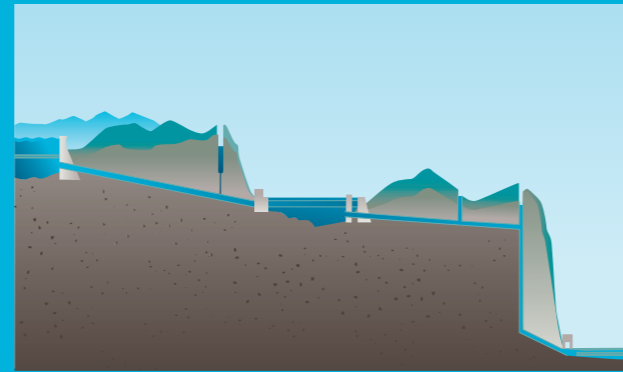
THE RHEIDOL HYDRO-ELECTRIC SCHEME

The upper reaches of the scheme are over 750 metres up in the remote hill country of the Plynlimon range. A series of aqueducts collects the water and channels it into the Nant-Y-Moch reservoir.

Water flows from this reservoir to a power station at Dinas where it drives a 13 000 KW generator. From the power station, the water flows into Dinas reservoir.

Dinas reservoir supplies water to the largest power station in the scheme, at Cwm Rheidol where there are two 20 500 kW generators.

At Cwm Rheidol a further reservoir has been created to avoid large variations in the flow of water. This reservoir collects the water that flows through the power station and releases it slowly through a 1 000 kW generator.



HISTORY

By 1955 the north Wales hydro-electric Act had been passed proposing to build new hydro-electric power stations in Wales.

30 men started the construction work in 1957. By 1958 there was a workforce of 1,000 men working on the Rheidol hydro-electric scheme, many of which had come from Ireland. By the end of the year, excavation of the three dams and pressure tunnels were well under way.

The biggest of the three dams required a 175 ft concrete buttress dam, stretching 1150 ft. across the valley.

Two pressure tunnels, totalling a distance of approximately 10 miles, were built to allow the water to travel between the reservoirs.

For the Rheidol hydro-electric scheme to be constructed, only two buildings had to be demolished. Both were situated 1800 feet above sea level in the Plynlimon

mountain range. One was the old Capel Bleanrheidol that had fallen into disrepair and the other was a house called Nant-Y-Moch farm.

Rheidol hydro-electric scheme was completed in 1962 and officially opened on 3rd July 1964.



HYDROPOWER AND THE ENVIRONMENT



Hydropower is pure energy – 100 % renewable and with no associated greenhouse gas emissions. Having done its job in the power station, the water is fed back into nature where it can continue on its perpetual journey, and eventually, evaporate and return as rain water.

Right from the outset, special attention has been paid to the environment throughout the Rheidol scheme. Elaborate landscaping was done to make the scheme blend into the natural beauty of the area. A special "fish lift" and a fish ladder provides access for salmon to reach their spawning ground.

Rainbow trout are reared at Cwm Rheidol in specially-constructed tanks alongside

the power station. These fish are put into Dinas where anglers are provided with a put-and-take fishing facility. This is to help support the indigenous population, providing angling in a more natural environment.

Rheidol Power Station is accredited with the ISO14001 standard for Environmental Management.

