

Case Study: 15kW Turgo Hydropower Scheme

Location: Llwyn Onn, Llangynog, Wales

Installed: February, 2012

Total Fall (Gross Head): 54m

Design Flow: 42 litres/second

Turbine Type: 2 nozzle Turgo, Direct Drive

Generator: 15kW Induction, 6-pole, Single Phase

Penstock: 408m of 225mm HPPE Pipe



The layout of the Powerhouse



The two intakes, which supply the forebay tank

This site will give an estimated annual Energy Production of 70 MWh, enough to supply 18 typical UK homes, and saving around 37 tonnes of Carbon Dioxide from being released into the atmosphere each year. The electricity is used by the customer, with excess exported to the National Grid, providing an alternative revenue stream for the farmer worth around £17,500 / year. This is index-linked so that it will increase each year in line with inflation, and the scheme will pay for itself in 4-5 years.



The Powerhouse before and after renovation