

Case Study: 15kW Turgo Hydropower Scheme

Location: Llangwm, Corwen, Wales

Installed: November 2011

Total Fall (Gross Head): 35m

Design Flow: 71 litres/second

Turbine Type: 3 nozzle Turgo, Direct Drive

Generator: 15kW Induction, 8-pole, Single Phase

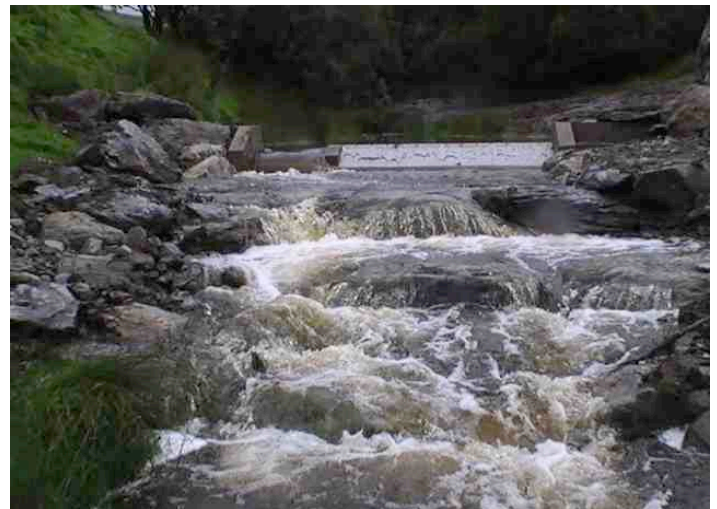
Penstock : 485m of 315mm HPPE Pipe



The layout of the Powerhouse



A view of the intake location prior to construction of the weir



A fish-pass was required. This was constructed with boulders to minimise visual impact



The Powerhouse

This site will give an estimated annual Energy Production of 45MWh, enough to supply 11 typical UK homes, and saving almost 24 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 this farmer worth around £12,000 / year. This is index-linked so that it will increase each year in line with inflation, and the scheme will pay for itself in 6-7 years. The customer was responsible for all civil works, with design and guidance from Greenearth Hydro: This minimised his capital costs and allowed him to fit the work around his own schedule.