

Ruswarp Hydro



The Whitby Esk Energy - Ruswarp Hydro community hydroelectric turbine was built by and is owned by Esk Energy (Yorkshire) Limited, an Industrial and Provident Society. The turbine is run by volunteers.

Name: Eureka!

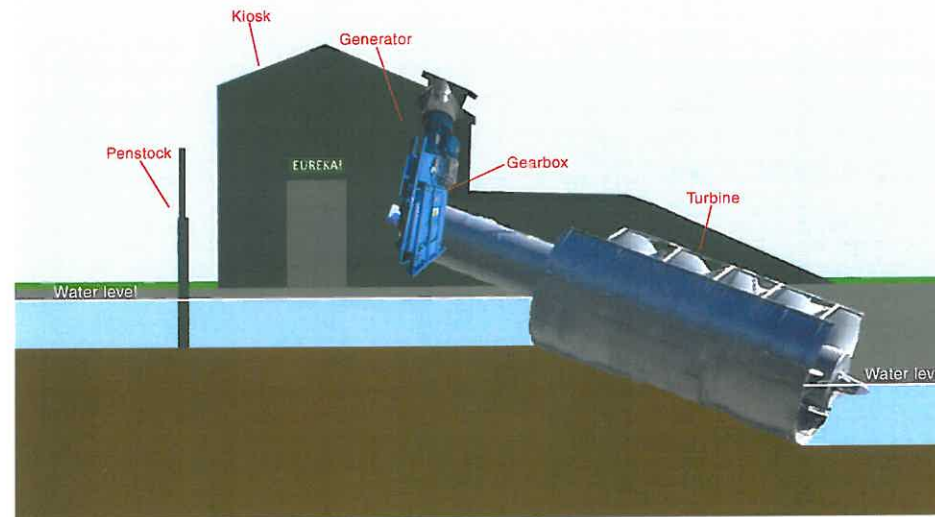
Maximum capacity: 50kW
Carbon footprint: 150 tonnes of carbon
Commissioned: 12th December 2012

What we expect in a typical year

Electricity produced:
160,000 kilowatt hours
Houses powered: 48 typical houses
(via the National Grid)
Carbon saving:
77 tonnes (CO2 equivalent)

Archimedes screw

Diameter: 2.9 metres
Weight: 12 tonnes
Head: 1.8 metres
Flow rate: up to 4 cubic metres
(4 tonnes) per second
Rate of turning: variable from 6 to 27
revolutions per minute



The turbine

The Archimedes screw is recommended by the Environment Agency as the most fish friendly turbine. It is the most efficient at low heads, well proven and reliable using a basic technology that has been around for 2000 years.

How it works

Water passes through the inlet screen, under the penstock and into the Archimedes screw from the upper river. Energy is removed from the water as the screw lowers the water to the river below. The screw turns the electricity generator via the gearbox. The generated electricity is then passed through the control kiosk to be exported to the National Grid.



Funding -The project was funded through a community share issue and a mixture of loans, grants and revenue share from the North York Moors National Park Sustainable Development Fund, North Yorkshire County Council Community Fund, Key Fund, Yorventure, Naturesave Trust and CO2Sense. Support was also provided by the Co-operative Enterprise Hub.

