

CASE STUDY

SCANDALE BECK, LAKE DISTRICT, UK



KEY STATISTICS

Customer: Scandale Beck Hydroelectric Company

Net Head: 195 m

Flow: 555 litres/sec

Turbine type: Gilkes Twin Jet Pelton

Power (kW): 944 kW

Dia: 750mm

Date of Commissioning:

Speed: 750rpm

SCOPE OF SUPPLY

Gilkes P316 Twin Jet Pelton

Main inlet valve

Synchronous Generator

Control & switchgear panel

Hydraulic control module

Control & power cabling (including building, lights and power)

Installation & Commissioning of Gilkes supplied equipment

Gilkes take huge pride in the delivery of the Scandale Beck Hydro Scheme which is within half an hour's drive of Gilkes manufacturing facility in Kendal. The scheme, which will contribute over 900kW to the national grid, or sufficient power for around half the population of Ambleside, is the largest hydro scheme in the English Lake District.

Nestled between Grasmere and Ambleside it offers the ideal setting for this environmentally conscious and highly efficient scheme. Operating at a speed of 750rpm the Gilkes Pelton Turbine will provide quiet, reliable and renewable power for future generations of Ambleside's residents and visitors.

CONTACT

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GILKES

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Gilkes worked together with Ellergreen Hydro to complete the project, commissioned during November 2015, on time and on budget. The Scandale project required considerable and careful planning, with the powerhouse clad in local stone in order to ensure minimum visual impact in this highly sensitive conservation area which is enjoyed by over 16 million visitors a year.

The twin Jet Gilkes Pelton turbine is a globally-proven design which in many variations of the format that can be referenced from Alaska to New Zealand.

The static head for the project is 199.3 metres and the design flow stipulated by the Environment Agency is up to 555l/sec under ideal conditions. The turbine will only utilise a portion of the water available in the beck, returning this water back to the burn at the bottom of the hill. The Twin Jet Pelton turbine was designed and built by Gilkes at their Kendal factory specifically for this scheme. Gilkes make use of CFD modelling (Computational Fluid Dynamics) and CNC machining to optimise the performance characteristics of the turbine runner and case design. This enables the compact plant to achieve efficiencies of up 90%, which will be maintained across a broad flow spectrum. In this particular installation the turbine will continue to generate renewable energy at these efficiency levels with flow rates as low as 55 l/sec.

Scandale Beck was an occasional treat for the Gilkes installation and commissioning teams who currently seem to be equally at home in Kendal or Kenya.



DESIGNED AND BUILT IN THE UK



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