



Strathdon

Aberdeenshire, Scotland

Client:	Private
Head:	3.8m
Type:	Open compact
Capacity:	2600 l/s
Rotation speed:	28 rpm
Diameter:	2600 mm
Angle:	26°
Max power output:	70kW
Est. annual output:	290,000 kWh
Annual CO ₂ saved:	123 tonnes

Application:

Installed on the site of an old turbine house, using some of the original structures, this development has been undertaken by a private client as an investment. 100% of the power produced will be sold back to the national Grid.

The Times and Mail
NEWS 19

Farmer to harness water power for the people

ARCHIMEDES HAS KEY ROLE IN LANDMARK SCOTTISH HYDRO-ELECTRIC SCHEME

BY ALISTAIR BEATON

The first hydro-electric scheme of its kind in Scotland is about to come on-stream in Aberdeenshire, harnessing the River Don to create enough electricity to power a village.

Farmer and offshore industry consultant John Riley is transforming a Strathdon hydro power site left derelict for decades into a green-made generating system based on one of the world's oldest scientific principles.

Creating a new future for the bridge of Nisne, built by a local estate in 1746 - the hub of Scottish electricity production, when the North of Scotland Hydro Board motto was Power from the Waters - is a 25-acre modern Archimedes screw. Green inventor Archimedes said to have come up with the water-lifting device in the third century BC.

Mr Riley, 77, who farms 800 acres at Semell, in Upper Donhead, said: "It is simple and very efficient. We have been working on the project all this year. There was extensive planning and consultation involved before construction began in July and the switch-on will come in a fortnight."

The father-of-two and wife Jacqueline bought the redundant hydro site several years ago and an area of woodland that has now been felled.

"It has been my dream to restore hydro power here," Mr Riley said. "This site and system is ideal."

The 40ft-long spiral of steel fits into the original structure. A new shaft has been craned up over a tunnel in the Don, linking the original underground feed - a 250yd pipeline big enough to walk in - to the reservoir.

The build-up of water turns the angled screw at 25 revolutions per minute, geared up to 1,400rpm to generate electricity.

The installation should pay its way in a matter of years, said Mr Riley who will locate a hydro-powered farm workshop on the site and a visitor centre highlighting the area and renewable energy. The diversification may also see a small brewery developed on-site using Semell barley.

Helping out has been Dave Mann, director of his own Yorkshire power consultancy. He has already set up five similar units in England.

"This hydro power scheme will create enough electricity to power around 150 homes, or a small village," he said.

Calderdale National Park Authority will hold a hydro training seminar on November 20 at Stradbrook Lough Hall. As part of the day-long event, 30 delegates from the News set-up. Details on the session are available on 01479 670035 or 670025.

TECHNOLOGY: John Riley at the Archimedes screw. Photograph: Kevin Embley

