



# Green Energy for Community

Radius install world class Data Radios and SCADA systems to monitor and control a community based hydro electric plant in England.

The Torrs Hydro project in New Mills England, required a communications system to monitor their hydro plant, and turned to Radius UK Ltd, a well known supplier of these data communication and SCADA systems, who were able to provide these as a local community project.

## PROJECT OVERVIEW

Torrs Hydro New Mills Limited was established to provide a community based hydro electric plant. The scheme is located on the banks of the Torr Weir on the River Goyt in New Mills in the High Peak of Derbyshire. One of the main purposes of the scheme is to share part of the revenue to help regenerate the community and to promote the environmental sustainability of the New Mills area.

The project was completed in 2008 and is believed to be the first community funded hydro electric scheme in the UK. The hope is that the installed 70kW Reverse Archimedean Screw with a diameter of 2.4 meters, will generate around 240,000 KWh (or units) and will help to fund future community based environmental projects.



## FIRST PHASE

Radius UK Ltd were able to offer their services in project management, installation and delivery of the communications systems for the hydro scheme. The first phase of the project was to plan and propagate radio surveys using the latest PDR data radios to find the optimum wireless connection for communication between the Hydro Station and the Monitoring unit based in the local Heritage Centre.

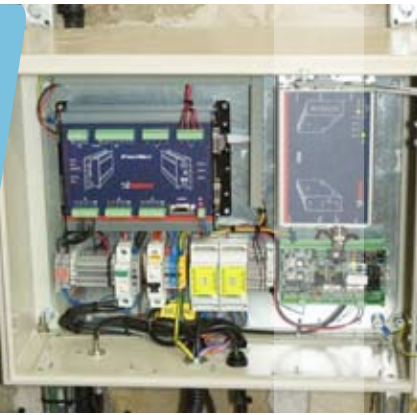
## SITE LOCATION

The radio sites in question are based in the valley floor and cliff top in New Mills, a standard spider antenna was enough to transmit data to and from the hydro plant, thanks to the PDR's high receive sensitivity. An added benefit of the radios is it's small power consumption over other communication options meaning more of the hydro plants power is used for what it was made for.

**“our Community owned renewable energy scheme has benefited from the global expertise of Radius UK”**

## PROPOGATION SURVEY

Once the propagation mapping and planning had been finalized Radius stated work on providing the small-scale SCADA systems that would control all aspects of the hydro scheme. A small graphical representation of the hydro scheme and communications can be seen within the Heritage Centre, a benefit the Operations Director Sean Whewell thought would benefit interested community participants.



## PDR UPGRADES

The project came at an opportunistic time since Radius were able to install their updated and enhanced new wireless data radio modems, which has further improved receiver sensitivity. Plus a host of additional specifications such as 2 RS232 ports making programming an easier operation. A new Ethernet port with an array of new IP based systems which means for the first time the PDR data radio could be remotely operated and controlled from anywhere in the world.

## SYSTEM MONITORING

The monitoring of the hydro station is achieved using the Radius FastNet RTU, which in its basic form is able to support 18 Digital Inputs, 14 Digital Outputs and 8 Analog Inputs. Data from the FastNet RTU is transferred via the PDR wireless

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data modem to a PC running Radius' SCADA-Lite software. The software allows the user a realtime overview of the hydrostation and the amount of power it is generating at any moment as well as historically.

Upon completion of the project Radius added one final touch an outdoor display for the hydro plant so any passers by could see how much power the scheme is producing at any one time.

## CUSTOMER COMMENTS

Torr's Hydro Operations Director Sean Whewell said, "It's fantastic that our Community owned renewable energy scheme has benefited from the global expertise of Radius UK. The solution that has been installed has helped not only in forging closer links with the New Mills Heritage Centre but also bringing a touch of the 21st Century as well".



In cooperation with:

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