

Micro-hydropower electricity generation could save the water industry millions

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New research findings from Bangor University and Trinity College Dublin have highlighted the potential for further cost savings from micro-hydropower. Savings of up to an additional £1m a year in Wales alone could help keep water bills down.

The [water](#) industry consumes a vast amount of energy due to the need to treat, pump and distribute water and wastewater around the country. This results in large quantities of [greenhouse gas](#) emissions as well as significant costs that can add to consumer water bills as the price of electricity increases.

A €1 million ERDF Ireland-Wales Programme (INTERREG IV)-funded [research project](#) investigated whether placing hydropower turbines within the water system could save the water industry, and water customers, money. The research looked at the current efficiency of water supply system, the best technology and how much it might cost, the environmental benefits, and which groups need to collaborate to enable the water industry to reap the greatest benefits from installing micro-hydropower into their systems.

The results proved positive, showing in Wales, for example that Dŵr Cymru Welsh Water could ultimately save a further £1 million every year by generating around 10 million kilowatts of electricity using micro-hydropower. That is enough electricity to power at least 2,000 homes in Wales, simply by harnessing water already flowing around the system. Similar potential savings were found for water companies in Ireland.

This would not only save money, but would also prevent around 10,000 tonnes of greenhouse gas from being released into the atmosphere by the generation of electricity.

However, the [project](#) partners also appreciated the difficulties faced in delivering these benefits in the current climate. Current hydropower technology cannot yet offer the low cost compact technology needed to realise all this potential.

Mike Pedley, Head of Energy from Dŵr Cymru Welsh Water welcomed the project findings saying; "At Welsh Water we already make considerable use of hydro but this project has helped bring into focus where more could be done with the right technological developments. Equipment such as pressure reducing valves are common in all water companies' networks but none has yet to offer a viable hydro solution for the majority of these sites."

The project partners now hope to take the initial findings further with the development and demonstration of new low-cost turbine technology. They are currently exploring regional and European funding to make Wales and Ireland world leaders in providing energy efficient water services to consumers. With the help of Dŵr Cymru Welsh Water this can be made a reality in the years ahead.

"The Hydro-BPT project has been insightful to say the least", said by Dr Prysor Williams, the project lead and Co-Investigator at Bangor University's School of Environment, Natural Resources & Geography. He added: "we hope to continue working with Trinity College Dublin, the water industry and other relevant stakeholders from across the EU in further projects that build on this work. There's no doubt that the [water industry](#) is demonstrating an awareness of energy efficiency, and the work of the Hydro-BPT team can help them achieve a more sustainable future."

Provided by Bangor University

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