



Dŵr Uisce

Energy Recovery in Water Services
Adennill Ynni yn y Diwydiant Dŵr

NEWSLETTER

20 September 2022



Welcome/Croeso/Fáilte

Welcome to our Autumn 2022 Newsletter, bringing you up to date on the Dŵr Uisce project.

In this edition, we highlight the Dŵr Uisce team's continued commitment to provide solutions to improve the sustainability of the water sector and to spread the message.

With the current energy crisis unfolding across Europe and the extreme weather witnessed leading to droughts and the need for water rationing, our work has never been more relevant and timely. The outputs of the project therefore have relevance to a much broader area than the study countries of Ireland and Wales.

In this edition, we reflect on how our research and technological applications have offered actions to lower the carbon footprint and water use in a historical pub. The article on our engagement with school children highlights the role of education in building awareness of the need for prudent water use amongst the next generation.

You can also read updates from our demonstration sites, in particular from the drain water heat recovery system at Penrhyn Castle in Bangor, north Wales. The upcoming launch event is on 11 October '22, and there is still time to register to find out how much energy, cost and CO₂ can be saved using this technology.

We are passionate about collaborating in response to these challenges and we thank you for being with us.

Roberta Bellini

Editor

Croeso i gylchlythyr hydref 2022 sy'n dod â'r wybodaeth ddiweddaraf i chi am broiect Dŵr Uisce. Yn y rhifyn hwn, rydym

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

neges. Gyda'r argyfwng ynni presennol ar draws Ewrop a'r argyfwng hinsawdd parhaus, ni fu ein gwaith erioed yn fwy perthnasol nac amserol. Mae'r argyfyngau presennol hyn yn golygu fod y gwaith yn berthnasol i ardaloedd ymhell tu allan y ddwy wlad astudiaeth, sef Iwerddon a Chymru. Yn y rhifyn hwn, rydym yn adfyfrio mewn darn sy'n sôn am ein gwaith gyda thafarn hanesyddol ar sut mae ein hymchwil a'n cymwysiadau technolegol yn cynnig atebion ymarferol i leihau ôl-troed carbon ein defnydd o ddŵr. Mae'r erthygl ar ein hymgysylltu â phlant ysgol yn tynnu sylw at rôl addysg wrth adeiladu ymwybyddiaeth ymhlith y genhedlaeth nesaf.

Gallwch hefyd ddarllen diweddariadau am ein safleoedd arddangos, yn enwedig am y system i adennill gwres o ddŵr gwastraff yng Nghastell Penrhyn. Mae'r digwyddiad lansio ar 11 Hydref 22 ym Mangor, gogledd Cymru, yn nesáu, ac mae amser o hyd i gofrestru er mwyn cael cyfle i glywed faint o ynni, cost, a CO₂ gellir arbed trwy ddefnyddio'r dechnoleg yma.

Rydym yn angerddol am gydweithio wrth ymateb i'r heriau hyn a diolchwn ichi am fod ar y daith hon gyda ni.

Roberta Bellini

Golygydd

UPCOMING EVENTS AND INITIATIVES

LAUNCH EVENT OF OUR HEAT RECOVERY SYSTEM



We are delighted to announce that we will host a Launch Event of our Drain Water Heat Recovery (DWHR) system at Penrhyn Castle on 11 October 2022. Penrhyn Castle is a country house in Bangor, Gwynedd, North Wales. The place is a very famous tourist destination, with a large footfall of tourists. The Castle Tea Room offers food and drinks to the visitors and serves as the demonstration site of our innovative technological solution to recycle heat from wastewater. You can read Ajeet Singh's piece below for more details.

The event is of particular relevance for commercial kitchen owners, hospitality managers and owners, food and beverage industries and any other businesses which uses high volumes of hot water who are interested to explore opportunities to

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

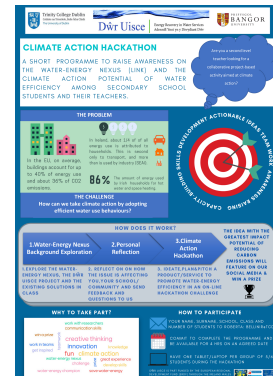
researchers and National Trust representatives, networking and discussions about future opportunities, as well as a guided tour of the DWHR system and historical tour of the Castle.

You can attend in person or join us online. Please register [here](#).

CLIMATE ACTION HACKATHON PROGRAMME FOR IRISH SECONDARY SCHOOLS

We are looking for five Irish secondary schools to participate in our Climate Action Hackathon Programme. A short programme to raise awareness on the water-energy nexus (link) and the climate action potential of water efficiency among secondary school students and their teachers. It will provide teachers with the material necessary to brief their students on the topic and students with the knowledge and skills to take climate action. The programme will culminate in an on-line event in the format of a hackathon, during which participants will ideate solutions to encourage more people to adopt water- efficient behaviours.

For more details click [here](#).



THE SECOND PART OF THE WATER-ENERGY SURVEY IN IRISH HOUSEHOLDS WILL LAUNCH SOON



Aisha Bello-Dambatta

We will shortly be launching the second part of the citizen science project which will collect data on actual household water use in Ireland. This data, alongside the result of the cross-sectional survey, will be used to assess the climate action potential of household water use efficiency in Ireland.

The cross-sectional survey launched last year was open to all households in the Republic of Ireland, ran for 7 weeks in September and October 2021. To read more about some of the key findings and for more details on the longitudinal survey, click [here](#).

UPDATES FROM OUR DEMONSTRATION SITES

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

WHAT WILL THE FUTURE BE?

Madhu Murali & Roberta Bellini

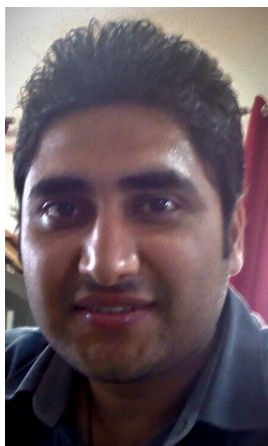
As part of the project, four [demonstration sites](#) have been set up to showcase real-life applications of micro-hydropower (MHP) and drain water heat recovery (DWHR) systems in Ireland and Wales.

We now ask ourselves different questions and particularly, looking ahead, we wonder what will the future of these examples of working novel technologies be? How do we make sure all the hard work is not lost but continues to create opportunities for knowledge sharing, demonstration and up-take of the technologies? How can we maximise the potential by increasing accessibility and outreach?

Read [more](#).



AN UPDATE ON OUR WASTEWATER HEAT RECYCLING SYSTEM



Ajeet Singh

With less than a month to go to our Launch Event at Penrhyn Castle, here is a short piece on how the system to recover heat from the wastewater flowing out of the Tea Room's kitchen works and on how it is performing.

Penrhyn Castle is a popular tourist attraction in the Bangor area. On busy days, up to 1500 people visit from all over the world. The Tea Room serves food and beverages to the visitors. Read more [here](#).

AWARENESS RAISING OF WATER-ENERGY NEXUS EFFICIENCY

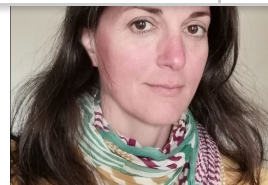
AN UPDATE ON OUR WORK WITH YOUNG PEOPLE

Roberta Bellini

Our team has continued engaging with young people in raising awareness about the water-energy nexus and its relevance for

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

busy with. Click [here](#).



DŴR UISCE RESEARCH IN A TRADITIONAL IRISH PUB



Aisha Bello-Dambatta & Katrin Dreyer-Gibney

Earlier this year the Dŵr Uisce Research Team visited a traditional Irish pub, [Gibney's of Malahide](#). The purpose of the visit was to assess its water and energy savings potential and make recommendations how both could be improved. Read the details [here](#).

RESEARCH UPDATES

EFFECT OF COVID-19 ON THE WATER SECTOR

Nathan Walker

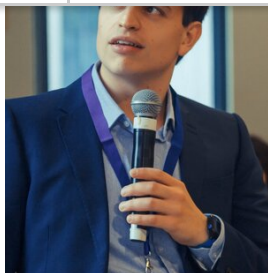
Research is currently underway on how COVID-19 affected the UK and Ireland water sector. The unprecedented scale and impact of the COVID-19 pandemic required organizations to adapt all facets of their operations, and the water sector was no exception. There was particular difficulty for the water sector since they had a shift in demand from business to residential and an increase in overall consumption due to the emphasis on washing and hygiene to combat the virus. Continue [reading](#)...



NEW RESEARCH HIGHLIGHTS THE IMPACT OF FUTURE CLIMATE CHANGE ON WELSH RIVERS

Richard Dallison

Dŵr Uisce research conducted by researchers in our Bangor team, and published last month in *Hydrological Sciences Journal*, has used hydrological modelling to characterise and quantify the potential implications of worst-case future climate

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

daily streamflow in five Welsh catchments (Clwyd, Conwy, Dyfi, Teifi, Tywi) between 2021 and 2080. Read [more](#).

SPREADING THE MESSAGE

THINKING DIFFERENTLY ABOUT HOW WE HAVE COLLABORATED IN THE DŴR UISCE RESEARCH

Paul Coughlan

The 29th Innovation & Product Development Management Conference took place at the Hamburg University of Technology (TUHH), Germany on 17-20 July 2022. Organised by the European Institute for Advanced Studies in Management (EIASM), the theme this year was "Innovation in the Era of Climate Change". The conference aim was to provide space for discussion of opportunities and challenges faced by companies and researchers when innovating for sustainability. The programme included a session on New Methods for Innovation Research. During this session, Dŵr Uisce team member Prof. Paul Coughlan of Trinity Business School presented a paper titled "Researching Green Process Innovation Across Borders and Boundaries: Implementing a Transdisciplinary Research Initiative". Read [here](#).



DANIELE NOVARA FROM TRINITY COLLEGE ATTENDING THE 2022 IAHR WORLD CONGRESS

Daniele Novara

Founded in 1935, the International Association for Hydro-Environment Engineering and Research (IAHR) is a well known worldwide association combining together researchers and practitioners from various fields related to water management and hydraulics. Its 2022 World Congress saw the participation

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

with other professionals. Among them, Daniele Novara presented a new research paper describing how submersible Pumps As Turbines (PATs) can be utilized as energy storage devices to absorb the excess of electricity generated by renewables and balance the electric grid. More about it [here](#).

ISABEL AT SDWES IN ALBANIA

Isabel Schestak

Our team member Dr Isabel Schestak from Bangor University presented at the Sustainable Development of Energy, Water and Environment Systems (SDEWES) conference end of May, which for the first time was held in Vlorë, Albania. The conference brought together academics from various disciplines involved with sustainable solutions in water and energy use or waste management. Session topics at the conference included circular economy concepts for cities and industries or waste and wastewater treatment technologies. Innovation in research and policy and management strategies were also part of the focus, including economic implications from the European Green Deal. Read [more...](#)



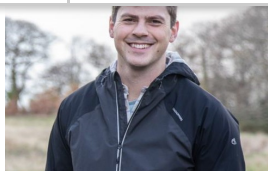
DŴR UISCE RESEARCHERS CONTRIBUTE TO EUROPEAN GEOSCIENCE UNION GENERAL ASSEMBLY

Richard Dallison, Roberta Bellini, and Aisha Bello-Dambatta

In late May, Dŵr Uisce researchers Dr Roberta Bellini, Dr Richard Dallison, and Dr Aisha Bello-Dambatta attended the European Geosciences Union's (EGU) 2022 General Assembly (EGU22), also presenting and discussing their work. Held as a hybrid event for the first time this year, the conference attracted many scientists and researchers from across the globe both to Vienna, as well as virtually online. Indeed, the event is one of the largest gatherings of geosciences related researchers in Europe, with EGU22 attracting some 12,400+ abstract submissions to over 770 sessions. Read [here](#).

NEW TEAM MEMBER JOINING

Welcome to Alex Rigby, who joined the Bangor team in May 2022. During his research masters (completed at the beginning of 2022), Alex 'straddled the line' between environmental

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

Building from his experience of both disciplines his role in Dŵr Uisce is to develop a user-friendly tool to visualise transdisciplinary project structure visualisation. Put in his own words: “Effective data visualisation can help uncover patterns and trends that would otherwise go unnoticed in static datasets. Not only can the insights gained through visual analytics of trans-disciplinary projects like Dŵr Uisce be used to inform structuring of future projects, the tool developed will have the potential to help assess the evolution of projects in real time”.

RECENT PUBLICATIONS

Journal Articles

Walker, N. L., Style, D., Coughlan, P., and Williams, P. 2022. Cross-sector sustainability benchmarking of major utilities in the United Kingdom. *Utility Policy* **78** (2022).

Conference proceedings

Bellini, R. & Coughlan, P. 2022. Getting everyone on board: how we are raising awareness for water-related energy efficiency with primary school children, EUSEA Conference ‘Let’s Co-create the Future’, 6-7 July 2022, Cork, Ireland.

Coughlan, P., Bellini, R., Bello-Dambatta, A. & Coughlan, D. 2022. Researching green process innovation across borders and boundaries: Implementing a transdisciplinary research initiative. 29th IPDMC - Innovation in the Era of Climate Change, Hamburg, Germany, 17-19 July.

Singh, A.P. & McNabola, A. 2022. Design of a hybrid grease trap for reduced energy consumption and improved fog retention in hot water. 5th International EWaS Conference, Naples, Italy, 12-15 July.

Novara, D. 2022. Experimental characterization of a submersible Pump As Turbine (PAT) and case-study of its application to a Micro Pumped Hydro Energy Storage (μ -PHES). 39th IAHR World Congress 2022 - From Snow to Sea, Granada, Spain, 19-24 June.

Schestak, I. 2022. Reducing costs and carbon emissions through drain water heat recovery in the European food service sector: A calculator for commercial kitchens. SDEWES Conference, Vlore, Albania, 22-25 May.

Bello-Dambatta, A., Bellini, R. & Williams, A.P. 2022. Energy efficiency through household water use efficiency: A survey on public perception of household water and water-related energy use in Ireland. European Geosciences Union General Assembly 2022, Vienna, Austria and Online, 23-27 May.

Dallison, R.J.H. & Patil, S.D. 2022. Water availability assessment for run-of-river hydropower under future climate change in the UK and Ireland. European Geosciences Union General Assembly 2022, Vienna, Austria and Online, 23-27 May.

Bellini, R., Bello-Dambatta, A., Coughlan, P., McNabola A., Dreyer-Gibney, K. & Murali, M.K. 2022. Dŵr Uisce Climate Action Hackathon – A cool connection. European Geosciences Union General Assembly 2022, Vienna, Austria and Online, 23-27 May.

Other

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

JOIN (OR RECOMMEND) THE DŴR UISCE WATER SPECIALISATION CLUSTER



Are you a company, a consultant, a university, a scientist interested in saving water and energy? Are you in one of the regions in Ireland or Wales covered by the [INTERREG funding initiative](#):

- Ireland - Carlow / Cork / Dublin City / Dun Laoghaire / Rathdown / Fingal / Kerry / Kildare / Kilkenny / Meath / South Dublin / Tipperary Waterford / Wexford / Wicklow
- Wales - Carmarthenshire / Ceredigion / Conwy / Denbighshire/ Flintshire / Gwynedd / Isle of Anglesey / Pembrokeshire / Swansea / Wrexham

You may eligible to join our [SMART SPECIALISATION CLUSTER](#) and benefit from a range of services we offer.

[Click here](#) for more information.

BUSINESS SUPPORT

Let us help you to reduce your water and energy costs.
For free!



DŴr Uisce | Energy Recovery in Water Services
Adennill Ynni yn y Dwyddiant Dŵr

Trinity College Dublin
University of Applied Sciences
The University of Dublin

PRIFYSGOL BANGOR
UNIVERSITY

Our aim is to support your business in saving water, energy, emissions and money, and thus making it more resilient for the future. We are a team from Trinity College Dublin and Bangor University, Wales, experienced in working with industry.

We offer a minimum of six hours free consultation time to:

- Measure your current water and related energy use
- Identify opportunities to reduce your water and energy consumption
- Propose cost-effective solutions
- Advise on how to improve your environmental footprint, both in your business and along your supply and demand chains

The free consultation we offer only involves a little time from your side - no financial investment is required.

Participation qualifies you to become part of the DŴR UISCE network with the opportunity to link and learn from similarly-challenged businesses. You will hear about technology choices, cost and carbon savings, avoid the mistakes others have made and connect with trusted suppliers.

Send us an informal request and start benefitting from our expertise, our support and our network.

Email: admin@dwr-uisce.eu
Phone: +44 (0) 1248 38 3219 (Bangor)
+353 (0) 1 896 1311 (Dublin)
Web: www.dwr-uisce.eu/business-support



DŴR UISCE stands for Distributing our Water Resources: Utilising Integrated, Smart and Low-Carbon Energy. The project is contributing to improving the long-term sustainability of water supply, treatment and end-use in Ireland and Wales. DŴR UISCE is funded by the European Regional Development Fund through the Ireland-Wales Cooperation programme.

[Subscribe](#)[Past Issues](#)[Translate ▼](#)

CONNECT WITH US

All project updates, progress, activities and events are posted regularly and shared widely on our [@Dwr_Uisce](#) Twitter account.

Follow also the hashtags: [#Dwruisce](#).

You can read more on our latest news @ our [News](#) section. Sign up for our newsletter [here](#).

SHARE THIS



Tweet



Share



Forward



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin



Dŵr Uisce

Energy Recovery in Water Services
Adennill Ynni yn y Diwydiant Dŵr



PRIORYSGOL
BANGOR
UNIVERSITY



Copyright © 2021 Dŵr Uisce, All rights reserved. Want to change how you receive these emails? You can [update your preferences](#) or [unsubscribe from this list](#)