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## Energy efficiency through household water use efficiency: a survey on public perception of household water and water-related energy use in Ireland

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We recently launched a citizen science project on household water-energy efficiency as part of the cross-border, interdisciplinary Dŵr Uisce research project on improving the energy performance and long-term sustainability of the water sectors in Ireland and Wales. Citizen science is emerging as a critically important means of democratising science by engaging the public to contribute to the creation of solutions to some of the most important topical global challenges like climate change.

The main aim of the citizen science project is to engage with and collaborate with the public to improve understanding of water-related energy use in Irish homes to help assess the most effective means of improving the efficiency and sustainability of household water-related energy use through water use efficiency.

The project consists of two key parts: a cross-sectional survey that assessed the current public perception of household water and water-related energy use, followed by a longitudinal study where participants record water use at home to assess the actual current household micro-component water use and associated water-related energy use. The findings of the project will be used to quantify the potential of climate action through household water-energy use efficiency in reducing emissions and costs, and to develop up-to-date best practice guidelines for climate action from household water use efficiency.

We will be presenting the results of the cross-sectional survey on current perception of household water and water-related energy use. The survey, open to all households in the Republic of Ireland, ran for 7 weeks in September and October 2021 and a prize draw was used to incentivise participation. We received a total of 265 responses of which 23 responses were partially completed responses (8.7%); however, data available for non-completed responses does not indicate any difference compared to completed responses, and it may well be possible some non-completed responders went on to restart the survey after it timed out. The survey consisted of 60 questions grouped by general questions on household water use (e.g., water provision, and water and energy metering) and household water use types (bathroom, kitchen, cleaning and laundry, and outdoor water use). It was designed to be disaggregated by the Irish Central Statistics Office (CSO) household demographic and socio-economic census as a segmentation framework: location,

household type, household age, housing status, employment status, household income and household size (disaggregated by age). The responses are found to be generally representative compared with the most recent 2016 census data in terms of location, employment status, housing status, household income, household type, and household age.