



South West Water: Developing a Business Case for Wastewater Heat Recovery

Overview

In early 2023, South West Water (SWW) commissioned Recirc Energy to generate a white paper detailing the role wastewater heat recovery (WHR) could play in their push to meet company and government-detailed net zero targets. SWW is the wastewater service provider for a population of around 1.7m people. Each day, SWW treats around 235 million litres of wastewater through an asset base that comprises 645 wastewater treatment works and 14,710km of sewers, providing an excellent opportunity to capture low-carbon heat from a readily available source.

Key Findings

Using extensive data sets and input from SWW personnel, Recirc quickly established that SWW is strategically placed to unlock an enormous untapped heat resource. We calculated that the company's large network of assets provided a theoretical heat availability of 2TWh per year. A conservative estimate is that 50% of this potential could be realised, which would equate to 1TWh per year of low carbon heat production using wastewater - enough to supply 100,000 homes.



After establishing the initial viability of WHR, Recirc completed a technology appraisal, detailed the carbon savings potential, and generated various business and commercial models for SWW to explore. The analysis provided SWW with the information required, including quantified heat outputs and projected figures, to establish next steps in adopting WHR. The study estimated that if SWW were to implement WHR at their 15 largest wastewater treatment sites, there was a median wholesale heat revenue potential of circa. £33m per year.

Results

By leveraging our expertise in WHR, real world experience in operating and maintaining a WHR site, and information provided by SWW, we delivered a comprehensive overview of the potential implementation scenarios across SWW assets. They will use this information to feed into their forward-thinking business and sustainability strategies, enabling them to achieve social and commercial goals in their journey to net zero.

"We have ambitious plans to transform how we produce and use energy, with a mission to minimise our operational carbon emissions and hit Net Zero by 2030. Recirc Energy brought a wealth of technical and commercial insight to this project helping us to understand the potential for this innovative heating source within our region. As a result of the project we are now actively exploring opportunities with a handful of project partners in the South West"

James Rowan, Renewable Energy Specialist, South West Water

