Poo turns power green at peak times

Sewage saves the day

Scientists at Thames Water have perfected the art of turning sewage into green electricity at peak times. This is 4-7pm, in the UK, as millions of people get busy cooking dinner, sticking a load of washing on or making a cuppa. As demand rockets, electricity prices go up.

We worked with sustainability experts at the University of Surrey on a four-year project to boost the production of biogas from human waste. This helps make the UK's electricity supply cleaner, greener, and more resilient at peak times when customers need it most. It also makes us more financially resilient to energy prices – the more resilient we are, the less impact there is on customers.

This clever science will reduce our energy bills and improve energy efficiency, an essential part of controlling our emissions and a significant aim of our net zero roadmap: Next stop, net zero by 2030.

> "This solution can significantly reduce our operating costs, and help the country achieve carbon neutrality. This means better financial and operational resilience, better environmental protection and a better service for our customers."
>
> Mauro Lafratta
>
> Energy Performance and Change Team

Sharing power – with all people

Because we'll no longer have to import power at peak times, we'll save money and there's more power in the national grid for everyone else. And, as peak-time power is usually generated by fossil fuels, using 'poo power' contributes to decarbonisation – another example of shaping a Net Zero future.

This pioneering project has been shortlisted in the 'Most Innovative Use of an Existing Technology' category at the 2021 Water Industry Awards. The research was successfully trialled at our Beddington sewage works in Croydon and is now standard practice at the site. Our hope is that the science will be adopted industry wide.

Making a meal of sludge

The really ingenious part of turning poo into power lies in how – and when – sewage sludge is fed into special ‘digester’ tanks. (The science bit: this is where the biogas-producing process of anaerobic digestion takes place.)

In the past, the same amount of sludge was fed in at regular intervals. Now, specific feeding regimes have been designed to increase biogas production between 4-7pm, when the price of electricity is much higher and carbon emissions peak. This solution will significantly reduce our operating costs and help us become carbon neutral.

Going net zero is not easy. To meet the challenge, we need to work with all our partners and adapt our plans as new technologies come out. The University of Surrey collaboration is a great example of this.

See more inventive energy saving stories >


Thames
Water