

PGES Net Zero Gas Mains – Andy Dunn, Thames Water

Defossilising the gas network – biomethane and hydrogen

Introduction

"Imagine each time you go to the toilet. For you its about getting rid of something, a way in which waste is taken away. But next time you hit flush, start to think about what happens to that waste next. What you may see as a waste becomes our opportunity; an opportunity to produce clean, renewable energy. When the waste you've flushed comes to us, we not only treat it to return it safely to our rivers but, in the process, our sector produces enough biogas to more than fill 200,000 Olympic sized swimming pools each year. That biogas is something we can give back to society by converting it into biomethane and using it to heat people's homes and reduce their emissions. Increasingly at Thames Water, we are becoming more than just a traditional water and wastewater company and are working as a renewable energy company as well."

Key points

- The water sector is playing a leading role among industrial sectors in the UK and has adopted its own target of net zero operational carbon emissions by 2030.
- At Thames Water, by combining renewable energy generation with purchasing renewable electricity from the grid, we have reduced our annual operational emissions to a net level 58% below our gross emissions. This reduction is equivalent to the typical annual emissions of 80,000 cars.
- We now meet 23% of our energy needs from on-site renewables. In 2019/20, we generated 313Gwh of renewable electricity, including from sewage treatment by-products such as biogas, enough to power the London Borough of Bexley for a year.
- Biomethane could meet more than two-thirds of the emissions reduction required to achieve the sector's net zero target. Water UK estimates that by 2025 biomethane could result in a 7.5 times greater carbon emissions reduction benefit compared to producing renewable electricity from biogas.
- Research by Water UK also suggests that, if the government's Green Gas Support Scheme (GGSS) was broadened to include upgrades to existing sites, our sector's biomethane production could help the Scheme reach 75% of its lifetime target of 21.6 megatonnes of carbon emissions savings.
- Given the costs of investing in biomethane production, there is a need for a clear policy signal now of support for it to avoid investment being locked in other, potentially less beneficial, forms of renewable energy.
- Biomethane from sewage sludge can also be converted into 'green hydrogen', as an additional source of renewable energy which we are keen to explore.