POWERED BY WASTE – CREATING FUEL FROM LANDFILL GAS

» Working towards our vision of a future with no more waste, SITA UK is proud to be the only landfill operator in the UK that produces green fuel from landfill gas.

» In partnership with Gasrec, the UK's first commercial producer of liquid biomethane (LBM) fuel from landfill gas, SITA UK is generating a renewable resource from municipal waste that is already helping to power vehicles across the country – helping to reduce reliance on fossil fuels and lowering emissions at the same time.

THE CHALLENGE

Through its research and development team, SITA UK is constantly investigating how to make the facilities it owns more sustainable and to extract as much value as possible from the waste we deal with. Landfill gas is already extracted and used in the generation of electricity at over 35 of our sites in the UK, but a partnership with Gasrec offered SITA UK the ability to use the gas to produce green fuel as well.

THE SOLUTION

Following four years' work, SITA UK and Gasrec opened the country's first liquid biomethane (LBM) plant in 2008 at SITA UK's landfill site in Albury, Surrey.

Landfill gas from the site is tapped off, collected and transported to the specialist plant where contaminants and inert gases are removed, refining the gas to 98 per cent methane. The gas is then liquefied so it can be easily transported.

The facility now produces more than five million litres of LBM each year – enough to power up to 1,098 waste vehicles at a 50 per cent substitution rate, which is the equivalent of around 6.5 million litres of diesel.

NEW TECHNOLOGY

RESULTS AND BENEFITS

The benefits of using landfill gas as a fuel are numerous: not only are potentially harmful greenhouse gases prevented from escaping into the atmosphere by using the landfill gas itself, but by using it instead of a fossil fuel it helps to reduce reliance on these finite resources. Specially-converted engines that use the LBM, as well as diesel, are also quieter than standard collection vehicles.

To put the benefits of using LBM in waste collection vehicles into practice and measure the best combination of LBM and diesel to use in an urban environment, SITA UK is now using a specially-converted vehicle in the Royal Borough of Kensington and Chelsea. Encouraging results have already been registered: up to 31 per cent of the vehicle's normal diesel usage is being substituted by LBM, reducing carbon monoxide emissions by up to 98 per cent as well as reducing noise.

"We are always looking at ways to improve how we collect our residents' waste and I am delighted that a refuse vehicle powered by landfill gas is collecting rubbish from the Royal Borough's streets.

"This is an important landmark in the Council's recycling history and highlights our commitment to protecting the environment."

Councillor Nick Paget-Brown, Cabinet Member for the Environment, Royal Borough of Kensington and Chelsea

WHY SITA UK?

"Finding ever-more innovative techniques to reduce the environmental impact of waste and using new technologies is central to our business, and as such we aim to see more of our vehicles using LBM in the future. Using fuel produced from landfill gas created at our own landfill site is a great example of how we can treat waste as a resource in a circular economy."

– Stuart Hayward-Higham, Technical Director, SITA UK