

Northumbrian Water reveals project to turn poo into sustainable aircraft fuel

Efforts to make aircraft fuel out from North East poo are under way, in what has been described as a world first project.

Researchers from Northumbrian Water hope to produce sustainable aviation fuel using algae grown in domestic sewage. The 'Green Machine' project will use the algae to extract nitrogen and phosphorous from wastewater, before it is recovered and turned into sustainable fuels.

Northumbrian Water hopes to use its Bran Sands Treatment Works site in Teesside to trial the process. It says the project, which has used a £6.5m investment from the firm, will help reduce environmental impacts of waste treatment and could save up to £1m operational costs per year.

The work is in collaboration with US-based firm BrightWave, which specialises in providing the photobioreactors that are used to cultivate algae, and Ligoflux – a specialist filtration company that provides products for algae harvesting.

Angela MacOscar, head of innovation at Northumbrian Water Group, said: "The Green Machine is set to revolutionise the way we treat waste, and we are incredibly excited that we have started work on this brand new project. With our 'Power from Poo' project, where we create green energy using the sludge that is left over from wastewater treatment, we have already shown that we are leading the industry in pushing the boundaries of innovation – and this is set to be carried forward with this project.

“Not only will this help to develop a value-added product, but it will also help to boost us forward towards our own net zero goals and help us to achieve our net zero ambitions.”

Tim Shaw, president at BrightWave, added: “BrightWave is thrilled to support Northumbrian Water in this innovative and important project. It will be one of Europe’s largest indoor algae-based initiatives and a model for future applications. We’re excited about how this venture’s integration of wastewater treatment, SAF development and a low-cost profile will position it as a viable and relevant worldwide solution.”

The UK Government has set up targets an effort to speed up the adoption of sustainable aviation fuel and decarbonise the industry. Its Sustainable Aviation Fuel Mandate requires 10% of all jet fuel in flights taking off from the UK to come from sustainable sources by 2030.

The requirements came into effect in January this year with the Government saying the “ambitious but achievable targets” will see about 1.2 million tonnes of sustainable aviation fuel supplied to the UK airline industry each year.