

From liability to resource

A company plans to use waste pulverised fly ash and turn landfill sites into renewable energy farms. **Andrea Lockerbie** reports

■ **WITH THE PRESSURE TO REDUCE WASTE TO LANDFILL, CUT GREENHOUSE GAS EMISSIONS,** generate green energy and develop new income streams for local authorities, a solution put forward by Lichen Renewal seems to tick an awful lot of boxes.

Founded last year, the company has come up with a method of capping former unregulated landfill sites (those that pre-date the Landfill Regulations) using waste pulverised fly ash (PFA) from coal-fired power stations. According to independent environment consultant Ged Duckworth, who has been working with the company, the UK coal industry produces six million tonnes of PFA each year, half of which goes to landfill.

"It is a useful alternative way of using the PFA waste stream instead of clay liner caps. In capping the sites, we are also looking to minimise greenhouse gas emissions," Duckworth says. Put simply, once the historic landfill sites are capped, the gas they generate can be captured.

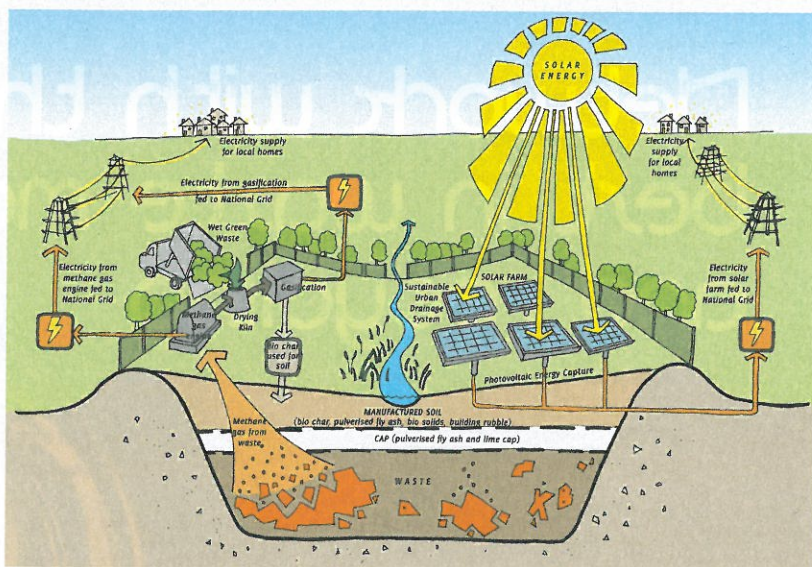
Duckworth explains that the company has done some modelling and found that capping the sites with PFA can result in a reduction of up to 36,000 tonnes of CO₂ equivalent going into the atmosphere – on average, the figure is 22,000-26,000 tonnes.

There are an estimated 22,000 historic landfill sites in the UK that are being monitored by local authorities. Lichen Renewal is proposing to take on the environmental monitoring and control of such sites, in a bid to restore them to use, generating 'green jobs' in the process and contributing to the UK's aim of becoming a low-carbon economy.

The company is looking to lease the former landfill sites from councils, and either pay a monthly rent or operate a profit share, depending on each individual case. What it will get in return are sites that still offer landfill gas of calorific value even though they may be past peak production, and space to house other renewable energy technologies such as gasification plants and solar panels. These renewable energy technologies will be housed on the site and connected to the grid, generating renewable electricity.

In addition, the company hopes to secure green waste contracts with local authorities, so that this stream can be dried before gasification and the biochar produced used on the land. This will also move biodegradable waste away from landfill and up the waste hierarchy.

Duckworth explains that the renewable energy



AT A GLANCE

A look at Lichen Renewal's vision of turning landfill sites into renewable energy farms that generate income for councils

Lichen Renewal's vision

generators will also be eligible for Feed-in Tariff (FIT) subsidies, so adding to the security and certainty of the business model. And by having multiple renewable energy technologies (solar, gasification, landfill gas) on one site, Duckworth says that a grid connection will be more economical.

The concept has not quite made the transition to reality yet, but it is getting nearer. "We are looking to do trials on a site in the south-east, and at the moment we are in the process of obtaining planning permission. We are also in discussions with regards to the restoration and use of other sites," he says.

"With FIT, Lichen Renewal is looking at a 20-year income stream and there is also potential for the gasification plants to carry on running, as well as the solar panels. Or, if need be, it can be handed back to the local authority and reverted back into public open space," he adds.

If all goes to plan, Duckworth says the company hopes the first site will be up and running later this year, and will then be able to act as a demonstration site for other interested parties to see: "We have had good interest because this is a way of local authorities saving money as well as gaining money." ■

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