Fowl play as scientists make power from chicken droppings

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Researchers at The University of Manchester have started work on a project to produce power from chicken droppings.

The project - supported by The Carbon Trust and Keld Energy - could lead to poultry farms of the future and their local communities being powered entirely by bird droppings.

Academics from the School of Chemical Engineering and Analytical Science (CEAS) are working to develop a small-scale power plant to destroy waste poultry litter, while simultaneously generating electricity and heat to keep growing birds warm.

It is projected that a single plant may be able provide all the heat and a substantial excess of electrical power for the average poultry farmer as well as a bio-secure and environmentally sound disposal route for the poultry litter.

These small power plants are being designed so that just one unit can consume all the poultry droppings and bedding litter, while providing all the heat and a substantial excess of electrical power for the average poultry farmer.

This type of facility would also offer a bio-secure and environmentally sound disposal route for some of the thousands of tonnes of poultry droppings produced by UK poultry farms every year.

Dr Alastair Martin, who is leading the project, said: "We envisage that excess electricity will be exported to the grid as 'green energy' - converting what is currently an environmental liability into a substantial income stream."

Dr Martin and his team are working to integrate a fluid bed gasifier - a device capable of converting biomass waste products into a combustible gas - with a small scale gas turbine, as well as investigating the best strategy for managing the energy generated.

Once this work is complete, it should be possible to deliver the generated fuel gas to a turbine engine in an efficient manner - culminating in the design and specification of the first full-scale prototype of the planned small-scale power plant.

The research team is aiming to develop a small system capable of generating 200kW of electrical power, with an anticipated 'litter to power' efficiency of approximately 30 per cent - ten per cent higher than existing technologies.

The team describe this as "a very substantial step forward in small scale energy generation from waste technology".

In the future other agricultural, forestry and joinery wastes will be targeted as potentially sustainable fuel sources.

Source: University of Manchester