

ON-FARM ELECTRICITY PRODUCTION



biogas give an annual income from year one, fit well into the crop rotation, and require no large establishment costs.

Biogas technology can be deployed quickly and unobtrusively without the potential planning problems attracted by windmills. Digesters work at 90% efficiency compared with windmills at just 30%.

Owen also sees other possible opportunities from his new biogas plant. The solid waste could be dried and used as bedding or sold as garden compost. Spare heat from the generator can be used to heat nearby houses and Owen's daughter already has plans for a Jacuzzi!

The UK government has a commitment to cut the production of greenhouse gasses and has a target of electricity generation from renewable sources of 20% by 2020—and so dairy farmers could help achieve these goals, says Owen.

"Methane is a greenhouse gas 21 times more damaging than carbon dioxide," he stresses. "Farming is responsible for 17% of the UK's uncontrolled methane emissions. Anaerobic digestion is an excellent method of capturing these emissions, using them to create energy. This in turn displaces an amount of fossil energy leading to further carbon savings.

"Biomass is set to become one of the key methods of providing renewable energy and dairy farmers are well placed to take advantage of this exciting new opportunity," concludes Owen.

• Owen Yeatman won a Nuffield Farming Scholarship, sponsored by the Oxford Farming Conference, to contribute towards four trips to Germany and two trips to the USA to gather information for his project: 'Making a profit from anaerobic digestion from animal waste and biomass'.

Owen Yeatman plans to build the UK's first on-farm energy crop to biogas electricity generation plant at Lowbrook Farm (pictured top left) early next year, similar to these commercial units operating in Germany.

The 340 Kw/hour plant will cost about £800,000 and produce enough electricity to supply 500 households. "The plant should pay for itself in five years, which is good in agricultural terms," says Owen.

He had drawn up a proposal for a grant from the Rural Development Service but the scheme ran out of money before he could submit his plan.

He hopes the new grant scheme to replace it will look favourably on schemes like his that benefit the environment and rural economy. "A grant would be very helpful to kick-start the project because it is pioneering technology," he argues.

Owen hopes the unit will become a demonstration plant to showcase the technology to farmers. "I want to use the new unit to produce figures for a business model which can be used to encourage other dairy producers to install units on their farms."

BIOGAS PRODUCTION FACTS AND FIGURES

- One hectare of maize can supply five households with electricity for a year.
- Manure from three cows can supply electricity to one household for a year.
- One tonne of maize can produce £40 worth of electricity.
- One tonne of cow slurry can produce £6 worth of electricity.



DAIRY HOUSING SPECIALISTS

CUBICLES – all sizes

Pasture Mats®

Poly Pillow™

Wilson Agriculture

ph: 02870 868430

fx: 02870 868803

www.wilsonagri.co.uk

cowcomfort@wilsonagri.co.uk

