

Substantial barriers precluding widespread biogas take-up by farmers

September 4 2015, by David Bradley

Land, labour and capital resource-related requirements, as well as significant regulatory and financial barriers are preventing more farmers from adopting an important renewable energy technology – Anaerobic Digestion, or Biogas to give it its shorthand name – according to research published in the *International Journal of Business Performance and Supply Chain Modelling*.

Animal manure, grass, maize and waste vegetable matter from farms can be converted into a methane-based biogas and a nutrient-rich soil fertiliser using a process called Anaerobic Digestion (AD), explain Martin Tidy and Xiaojun Wang of the University of Bristol, and Mark Hall of the University of Birmingham, UK. There has been enthusiastic uptake in Germany and elsewhere in Europe of on-farm AD facilities. However, despite AD being a [renewable energy technology](#) that could mitigate greenhouse gas emissions and save farmers money on heating and electricity costs, only a small and slowly growing band of "early adopters" in the UK are using the technology, the team points out.

Martin Tidy and his colleagues have looked at six case studies of early adopters of on-farm AD in South West England and suggest that even though the UK government is keen to promote the technology there are substantial barriers precluding its more widespread take-up by farmers for home energy use or export to the grid. Fundamentally, the necessary changes in the way a farm operates in order to to adopt AD means it is usually a large time and capital-hungry investment that has to fit in with existing crop and livestock enterprises . But, there are lessons to be

learned by the far more enthusiastic use of on-farm AD in Germany that might help British farms diversify their [energy sources](#) and improve their waste-management practices extensively.

There are potentially many economic benefits to the adoption of on-farm AD: improved profitability, energy cost control, return on capital, diversification of income sources, business resilience and energy security. There are also significant environmental benefits: compliance with statutory regulations now and in future, improved soil health, plus global benefits through a reduction in carbon emissions and a reduced reliance on fossil fuels. Nevertheless, the team concludes, establishing an on-farm AD plant is a complex and 'thick-ended' process, in the sense of having to achieve the alignment of many factors crucial to viability ahead of the investment decision. A clearer lead must come from government in the form of proper [energy](#) price and investment support and streamlined planning rules, then, "the on-farm AD sector will have the potential to grow, eventually establishing a better track record with which to impress private lenders, and creating a larger UK AD industry-base, so driving down costs due to economies of scale, as well as creating a market of a size sufficient to encourage the wider growth of a technical support sector."

More information: 'Prospects for on-farm anaerobic digestion as a renewable energy technology in the UK: learning from early adopters', *Int. J. Business Performance and Supply Chain Modelling*, Vol. 7, No. 3, pp.256–277.

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