

# Lodge Farm AD Plant RASE Open Day and fre-energy 'Biogas2market' Workshop

Venue: Fre-energy Lodge Farm, Commonwood, Holt, Wrexham LL13 9TE Thursday 17<sup>th</sup> October 2013

# Agenda

9:45	Registration				
Morning presentations schedule					
10:00	Welcome & Housekeeping		Richard Tomlinson Charlotte Johnson		
10:10	The role of AD in agriculture		Charlotte Johnson		
10:25	Fre-energy AD system at Lodge Farm		Richard Tomlinson		
10:45	Closed-loop nutrient cycle: Sustainable farming				
11:05	Refreshment break				
11:15	Financial planning and income potential	Workshop: Case study 160kW Plant			
		- Outlay and Return on Investment			
		- Outputs: Digestate and energy use			
11:45	Linking bio-refining and AD; potential to add value?		Joe Gallagher		
12:00	Pre-treatments and microbiology of biogas		Sreenivas Ravella		
12:15	Lunch				
	Q&A				

# Afternoon workshop schedule

13:00	Tour of Lodge Farm operational AD plant (sturdy footwear required) - Separated into groups			
14:00	Implementing an on-farm AD: Checklist		Denise Nicholls	
14:15	Operating an AD plant: G	Chris Morris		
15:00	AD Project Planning, including regulatory requirements	<ul> <li>Workshop: Desk-top feasibility study</li> <li>Feedstock evaluation</li> <li>Sizing the digester</li> <li>DNO grid connection</li> <li>Planning</li> <li>Permitting</li> </ul>		

16:00 Depart









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#### **Speakers:**

### Richard Tomlinson – Managing Director

An innovative and successful organic dairy farmer, Richard farms over 1000 acres of land that carries a herd of 650 dairy cows plus young stock. Co-founder and Managing Director (Lodge Farm Biogas and freenergy are subsidiaries of the parent company Farm Renewable Environmental Energy Ltd.), his inherent knowledge of land management, and an understanding that valuable nutrients in organic waste streams should be put back on the land, led to his interest in anaerobic digestion to recycle nutrients from cattle slurry. He sees the adoption of anaerobic digestion as the next step in responsible sustainable farming.

**Charlotte Johnson** – RASE (Royal Agricultural Society for England): Livestock Technical Specialist and event co-ordinator.

#### Chris Morris - Technical Director

With a degree in electrical and electronic engineering, in previous years Chris has been instrumental in the design of various control systems for the MOD, specialist pumps at Avonmouth sewerage works (where he was first introduced to Anaerobic Digestion) and failsafe elevator control systems both in the UK and abroad. Formerly a long-standing company director of a successful family-owned manufacturing company, he contributes a depth of experience, technical skills and management capabilities to his current position where, for the last 5 years, he has driven the design, development and management operations of the unique patented fre-energy anaerobic digester system now implemented throughout the UK.

## Denise Nicholls - Business Manager

A former project manager and scientist within the biotech industry, having developed several first-to-global-market diagnostic test kits to detect contamination and adulteration of food, Denise brings a wealth of experience to support the commercialisation of the fre-energy AD system.

**Dr Joe Gallagher** heads up the Bioconversion and Biorefining Group within the Institute of Biological, Environmental and Rural sciences (IBERS) at Aberystwyth University. His research is in the areas of plant carbohydrates and in the processing and conversion of feedstocks to a range of products including biofuels and platform chemicals. <a href="https://www.aber.ac.uk/en/ibers/staff/ibg/">www.aber.ac.uk/en/ibers/staff/ibg/</a>

**Dr Sreenivas Ravella** a Fermentation Scientist at Aberystwyth University, is involved in numerous pan-European projects related to reducing the impact of climate change. At the invitation of Dr Ravella as Principal Investigator for the Climate-KIC Pathfinder programme, fre-energy is involved with the Biogas2Market project (Sustainable Biogas Process Optimisation & Implementation Strategies). www.beaconwales.org/en/team/view/sreenivas-rao-ravella.





