



**Dr. Jonathan Scurlock, National Farmers' Union**

# ***Background and the Big Picture***

**AD for profitable farming and  
environmental gain**

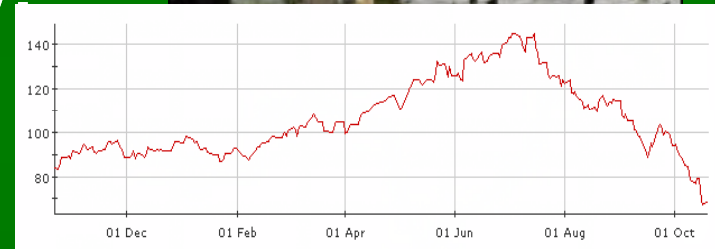
**Alderley Edge, Cheshire, 11 Dec 2008**



**The NFU champions British farming, and provides professional representation and services to its farmer and grower members**

# Energy security, food and climate change

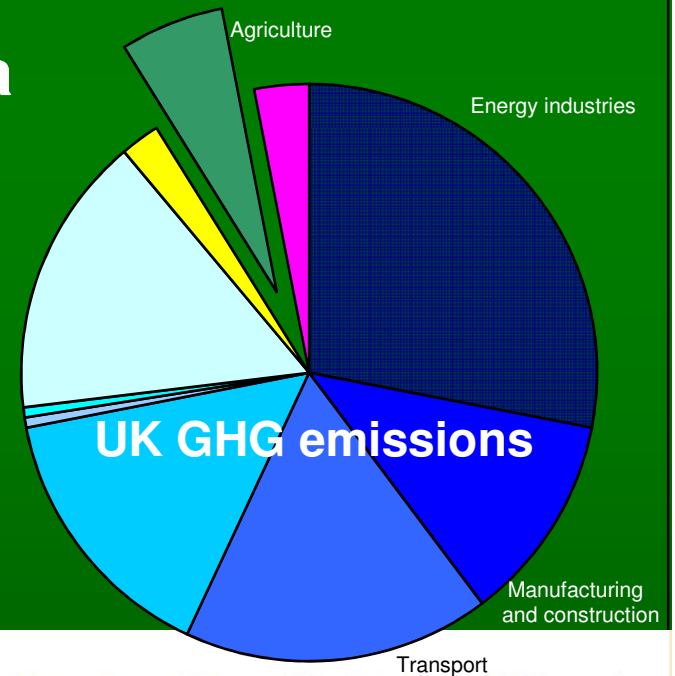
- Climate change - never-ending media coverage? Warmer/wetter/more extreme events, looking towards 2020 and 2050
- Crazy oil prices and energy security: \$140/bbl was higher than 1980
- An end to declining food prices, due to worldwide structural change, globalisation and new markets (biofuels/bioenergy)
- Climate change, energy and food security are converging to drive policy at international, national and regional level – threat or opportunity?



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# *Why this is important for farmers*

- climate change → GHG emissions reductions policy at international and national level (now 80%)
- challenging EU and UK targets for renewable energy – for electricity, transport fuels (and soon for heating)
- agriculture is part of the solution to a public problem – CC Task Force
- private sector also becoming an important driver – perceived demand for “low-carbon” food and other products (PAS 2050)
- AD offers multiple benefits



# *Emerging NFU policy on AD/biogas*

- AD is about more than just diverting waste from landfill; also a rural economic/diversification opportunity
- NFU does not wish to see every farm-based biogas proposal labelled as "waste management"
- maximum benefit in terms of water quality benefits and reducing GHG from livestock farming (through optimal manure management) will be achieved by rolling out a very large number of farm-based AD systems distributed around the country



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## *Two likely scales: on-farm and waste-licensed*

- on-farm AD - manures and farm-based (silage) feedstocks, regulated under low-risk environmental permitting, income from energy sales only. Likely scale 1000-2000 m<sup>3</sup>, 0.25-1.1 MWe. Some may require capital grant, soft loan or project development support
- waste-licensed AD – multiple organic feedstocks, may still be based in rural locations but different business model (income from energy and gate fees). Likely scale up to 10,000 m<sup>3</sup>, 0.5-10 MWe – more profitable and ‘bankable’, but longer development lead time



## ***Regulatory and planning framework should recognise a range of models***

- A.** Large single farm AD, supplying own farm-based inputs and land-spreading digestate to own land
- B.** Multi-farm cooperative or subcontracted AD operation, similar to above but typically involving 3-4 farms within a locality, sharing both inputs and digestate
- C.** Centralised merchant AD facility; may receive manures/slurries but also charging gate fees for wastes diverted from landfill (food processing, local authority green waste). Stricter regulation of digestate
- D.** Large materials reclamation facility, accepting wide variety of wastes and incorporating AD as part of a wider process – maybe with biomethane upgrading



## ***NFU policy recommendations on AD/biogas***

- regulatory framework must not inadvertently act as barrier to AD development at smaller, on-farm scale
- urgent need to raise awareness of technology and waste/non-waste permitting framework with local planners and communities
- government ETF demonstration programme should have focussed more on wide range of smaller plants utilising mostly agricultural inputs, including horticulture. Investment in larger waste-based systems is more likely without government support



## ***Could micro-scale AD work here?***

**India and China – long experience of self-build systems (brick-lined pits) but low yield, fugitive emissions and significant labour + O & M costs**



**India – typical small rural system with floating gas holder**



**China – more modern products now available for as little as £3000! (Puxin biogas)**



# Conclusions – NFU Vision for ‘2020 AD’

- Farm-based AD offers widespread environmental benefits – but more sensitive economics requires incentives and removal of barriers in order to deploy 1000 farm-based AD plants (500 MW) as contribution to Renewable Energy Strategy
- Rural communities might also be served by 100+ larger waste-licensed AD facilities (300 MW) coupled to farm businesses – but need clear distinction. Total of 6 TWh plus 6 TWh heat



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The NFU logo, consisting of the letters 'NFU' in a stylized, outlined font.