



Anaerobic Digester's -A case study

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ANAEROBIC DIGESTION

A simple process first developed by
the Chinese

Walford Farm

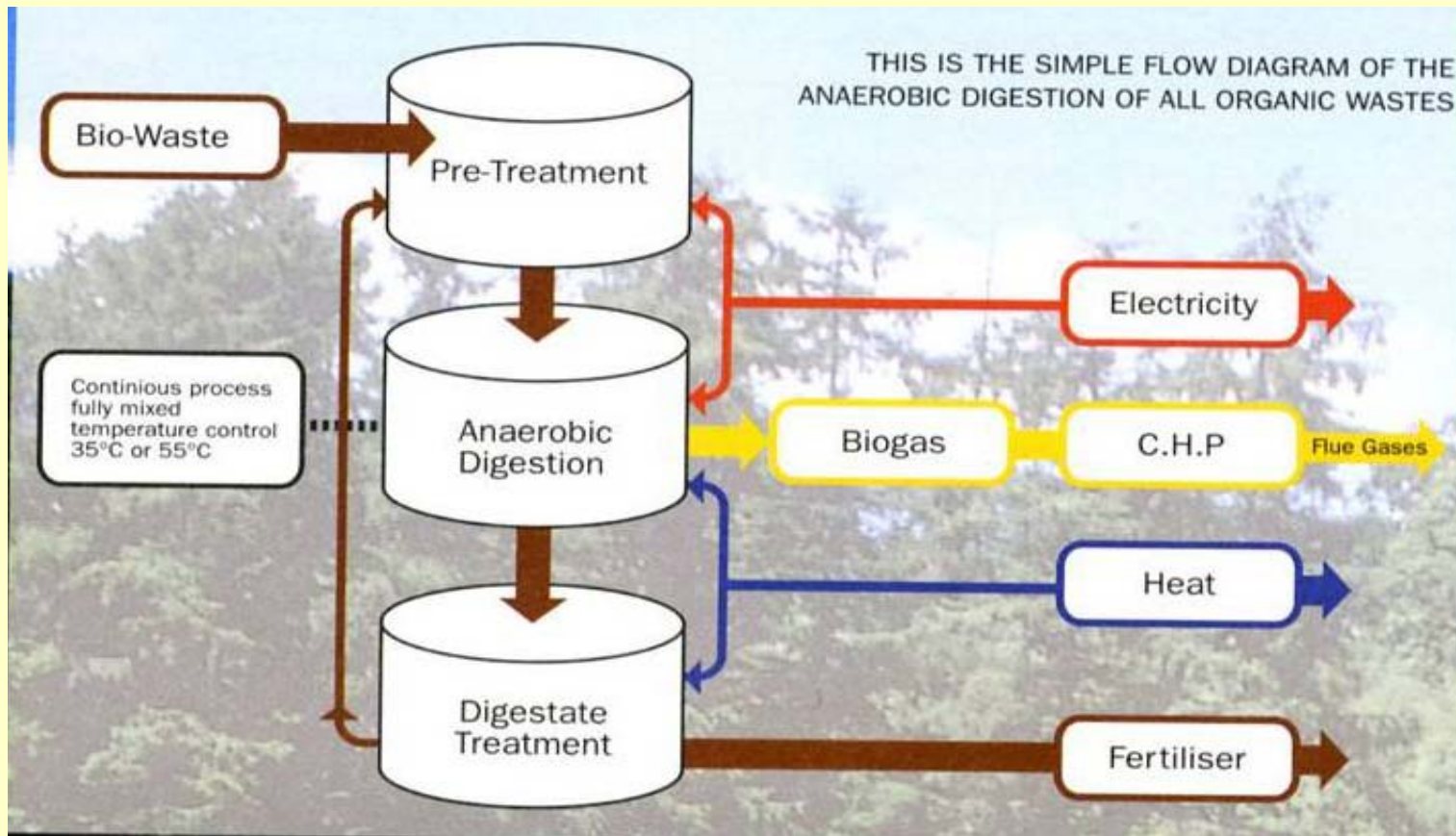
- 500 acres
- 220 dairy cows, 100 followers
- 300 Lleyrn ewes
- 155 acres Cereals
- 75 acres Maize
- 215 acres grass
- 50 acres woodland
- Environmental Stewardship



The Walford Digester

- Life funding
- Set up and operation
- Problems
- Benefits

The AD Process



Why Install an AD Plant?

- Demonstrate the technology and the use of AD in Farm Waste management
- Maximise potential benefits of AD within a farm based system
- Maximise the use of the farm resources
- Evaluate the system and component parts
- Comment on costs, benefits and viability
- Reduces Methane emissions

The Installation

- Opportunity to apply for Life funding arose in 1993
- Shropshire County Council helped with grant application
- Planning Permission granted in 1993
- Site preparation and Anaerobic Digester installation started February 1994, took 8 weeks
- CHP unit commissioned October 1994

The Process

- Intake of chopped waste
- Feedstock
- Retention time
- Temperature
- End Product utilisation

The 5 Golden Rules

- Temperature
- Good diet
- Temperature
- Good mixing
- Temperature

What Are The Benefits?

- Manageability of products
- Odour reduction
- Simple technology
- Small reduction in BOD
- Energy production
- Enhanced nutrient availability in separated liquid

Drawbacks

- Maintenance
- Operator time
- Capital investment

Financial Implications

- Installation costs £132,500
- Annual running costs £3,500 (excluding farm labour)
- Increased nutrient availability £2,000
- Electricity production £10,000
- Eligible for “Double” ROC’s £5,000
- Compost sales £2,500

Potential

- Finance (investment)
- Sales
- Energy production
- “Gate” fee on green waste
- Summer feed stocks
- NVZ regulations