

Sustainable practice in Universities

Organic Waste Management

Bill Elliott, Chairman Envar Ltd

Envar Ltd

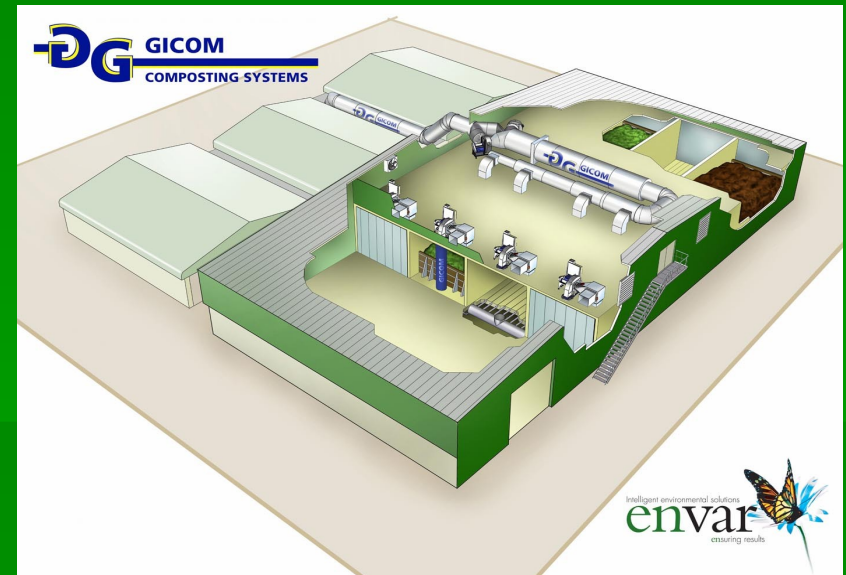
- Wholly owned subsidiary of ADAS Ltd – previously the government agricultural advisory service
- Composting and spreading waste to land within the law
- Defra demonstration project for IVC
- Large IVC composting site with licensed capacity of 105,000 tonnes

The Problems

- Mixed Waste
- Recycling – what, where and when
- ABPR
- Scale
- Cost

The possible answers

- MBT= mechanical biological treatment
- AD = Anaerobic Digestion
- Composting – but IVC (in vessel composting because of ABPR)



MBT

- Combines mechanical or manual sorting to remove any remaining recyclables with either drying, AD or composting of the balance of the waste.
- Suitable for organic waste and now used for MSW – East London
- More suited to larger volumes than a University likely to produce - cost

AD

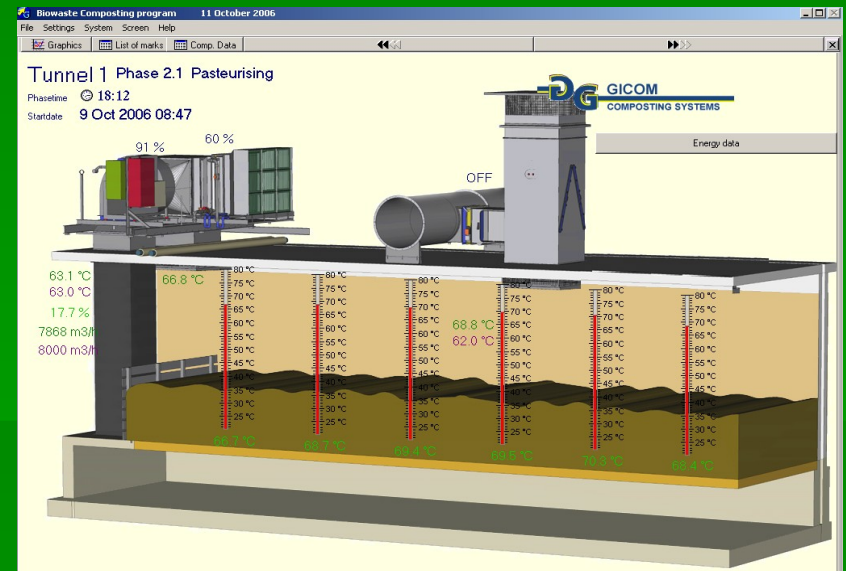
- Most suitable for food waste but that can be mixed with any other organic material – paper, cardboard, grass clippings, effluent, sewage or animal waste
- Produces biogas and digestate
- Digestate may go to land as a fertilizer but requires consent
- Gas can be used to generate electricity or for heating – electricity unlikely in this size of plant

BUT

- No AD plant reaches temperature (60C) to comply with ABPR so external heating of tanks or system is necessary
- Plant will require permitting by EA
- Will require consent of Animal Health and subject to inspection by local authority health inspectorate

Composting

- ABPR will mean that will have to be in vessel composting – currently 2 passes each reaching required temperature(60C)
- New regulations under EU legislation will probably allow single pass for controlled tunnels
- 6/7 days in tunnel and then period of maturation on properly drained concrete pad = leacheate disposal.
- Compost can go to land but requires approval



Composting at St Ives



BUT

- Permitting by EA necessary
- Will require the same approval by Animal Health and same inspection by both EA and local authority

Options

- Get waste management company to take your waste to an IVC or AD plant – but 4 AD plants in UK!
- While IVC more common they are mostly full – large number of farmers obtaining planning permissions but financing
- Build your own AD plant (research and development – autoclaves for waste treatment totally developed by University of Alabama)
- Combine with your local supermarket food waste or take their waste as well?

Options - Continued

- Build a tunnel but you need pad and leachate disposal point
- Planning permission - space – cost. A single tunnel is expensive.
- What would I do – find a good contractor or build a small AD plant in a JV with an operator and find use for gas – heating – fuel for vehicles on site.
- BUT you need to keep it going – how much material do you have?
- Core business – do what you do well
- Financing?