



Association for  
**Organics Recycling**

# **Biowaste Management Today**

APSE

Environmental Services Seminar

15<sup>th</sup> October 2009

# The talk

- Who we are
- Sector growth
- What is composting?
- Market development
- Technology review
- Lessons learnt
- Threats
- Rising to the challenge

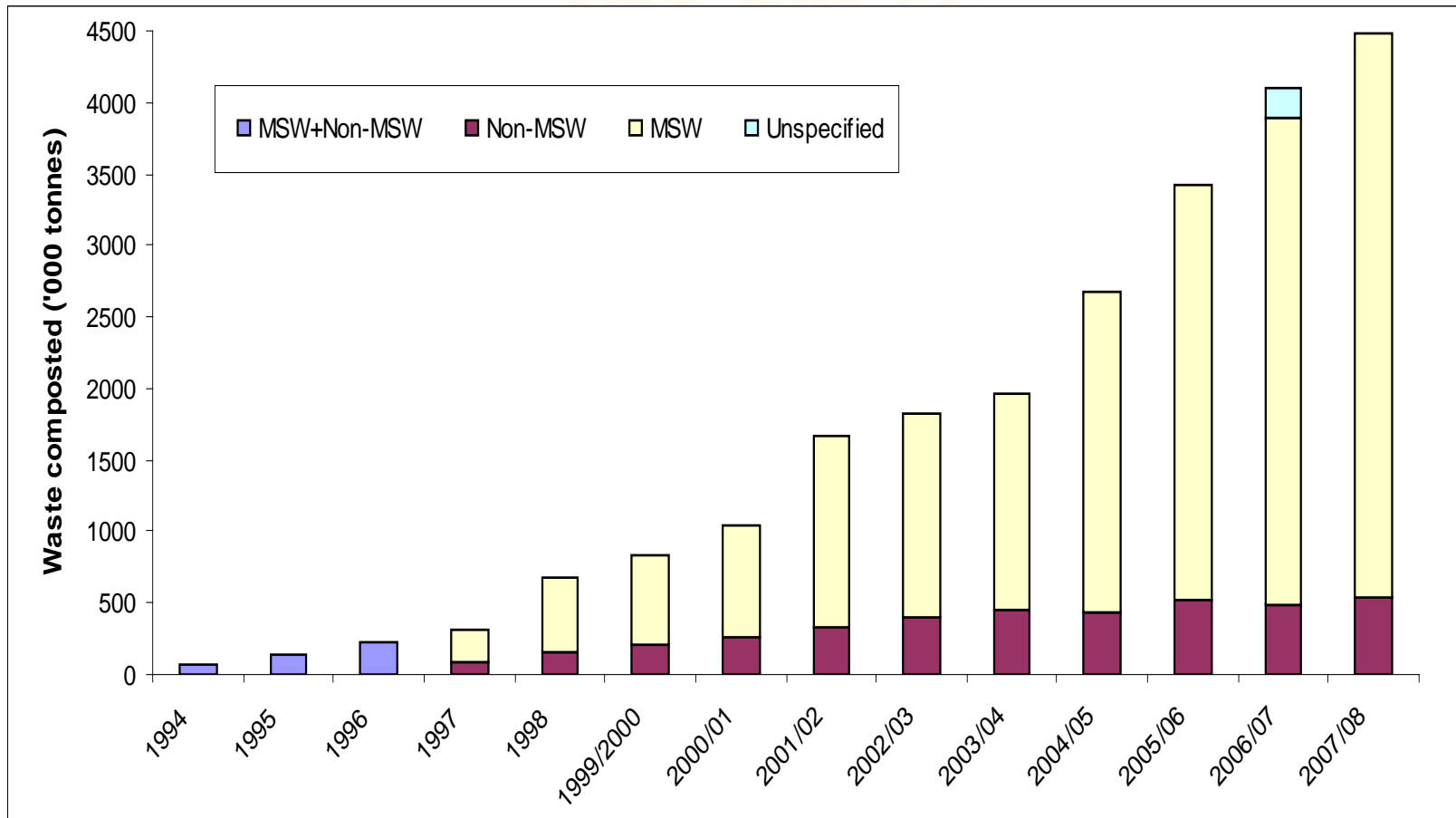


# The Who

- UK's leading trade organisation that promotes the use of biological treatment activities
- Information focal point for all stakeholders involved in biowaste and organics treatment
- Promotes the long term sustainability of the biowaste industry
- Approx 450 members
- Recently re-branded to capture wider market



# Growth in UK composting based on quantity of input source segregated waste material



# Headline figures

- 9% growth to 4.5 mt
- 50% CA ~ 50% Kerbside
- Turnover up to £148 million
- 75% of processing from largest 25% of players
- OAW accounting for 86% of capacity
- 9% IVC/AD
- 38% certified to PAS and QP
- 1.1 mt compost to agriculture



# COMPOSTING

## Legislation

- Licensing/Permitting
- Planning
- **Animal by-products**
- EU Directives

## Sociological

- **Participation**
- **Education**
- Perception
- Political will

## End uses

- Contaminants
- Benefits
- **Marketing/s**
- Transport
- **Standards**

## Environmental impacts

- Storage
- Transport
- Processing
- End use



In practice it's complex!

## Ideology

- Waste hierarchy
- **Proximity principle**
- Political will

## Seasonality

- Arisings
- Access to gardens

## Costs

- Capital
- Revenue

## Collection & transport

- Close to arisings
- **Carbon footprint**

# Recycling, Energy & Strategies

- Waste Strategy for England 2007
  - Targets for local authorities
  - C&I waste
  - Focus on Anaerobic Digestion by DEFRA
- Energy White Paper
  - Energy security
  - Biomass – possible threat
  - 2 x ROCs and subsidies for AD
  - “Peak oil” debate

# Paragraph 21 Loophole!

- In place for shredding/processing
- NOT composting
- Being abused
  - Undercutting legitimate operators
  - Stored and spread under Para 7a
- Cannot claim NI 192 as no composting taking place
- Lower pathogen kill
- Not managed process



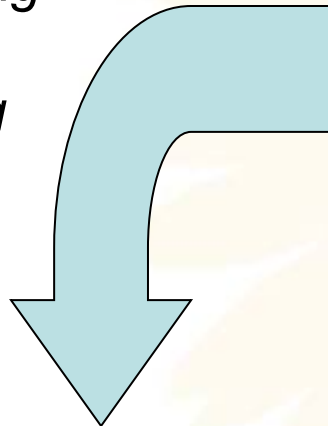
# Process Choices - Factors

- Legislation
  - ABPR
- Feedstocks
- Area type
- Collection & transport infrastructure
- Public participation

*Source separated  
product*

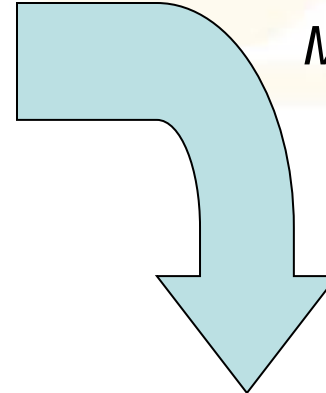
*manufacturing  
process:*

- Composting
- AD
- IVC



Quality composts  
for sale

Biowastes



*Mixed waste pre-  
treatment*

Stabilised biowaste for  
landfill, incineration or  
disposal to land or land  
restoration projects



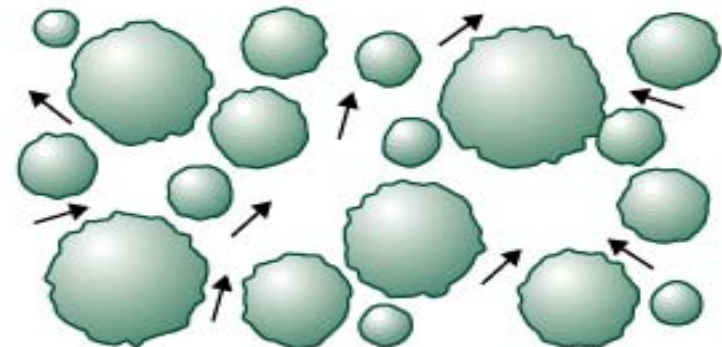
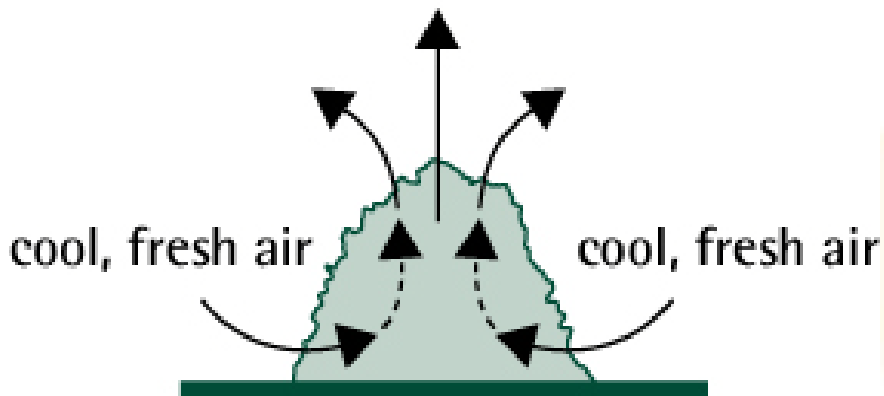
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# Composting - the Basics

- Action of natural micro-organisms
- Converts organic wastes
- Produces stable humic substances
- Releases heat

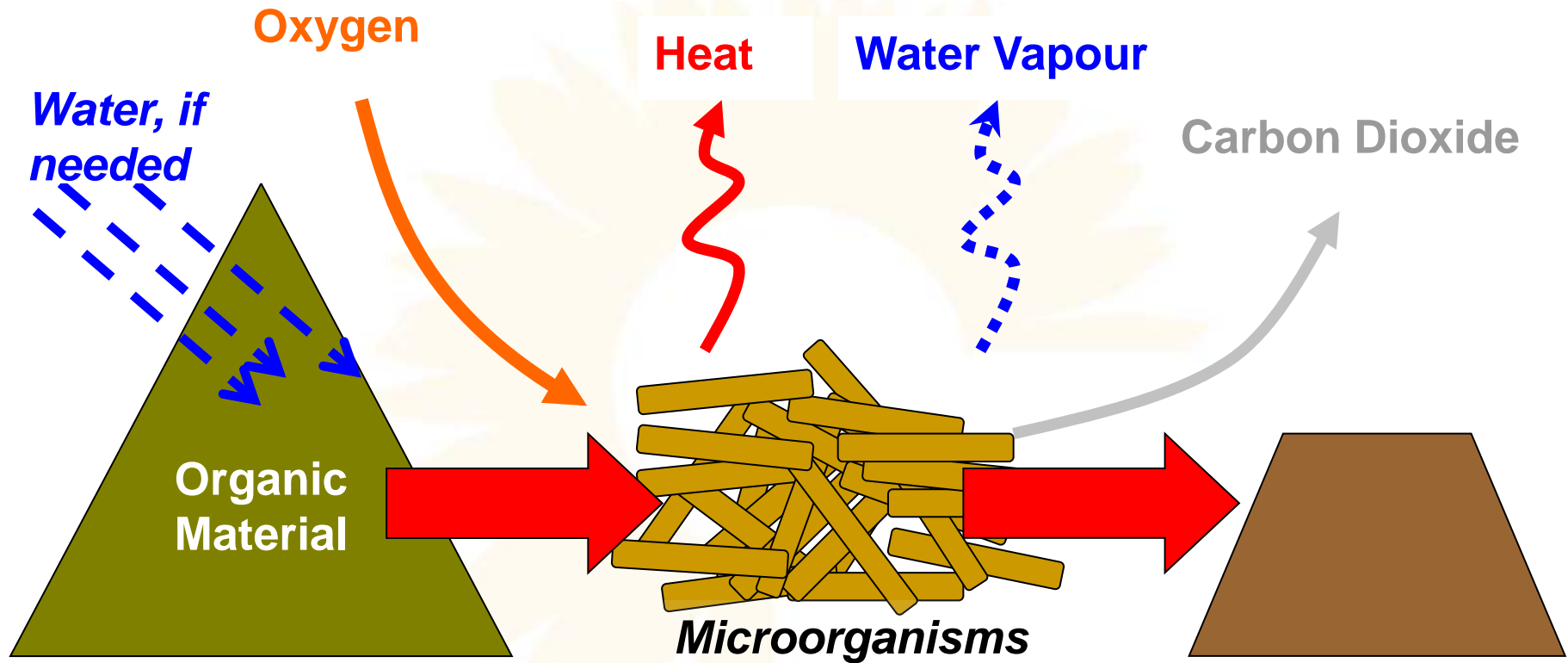
- Composting needs:
  - Oxygen (fresh air)
  - Moisture
  - Correct particle size
  - Feedstock mix

stale air, heat and water vapour



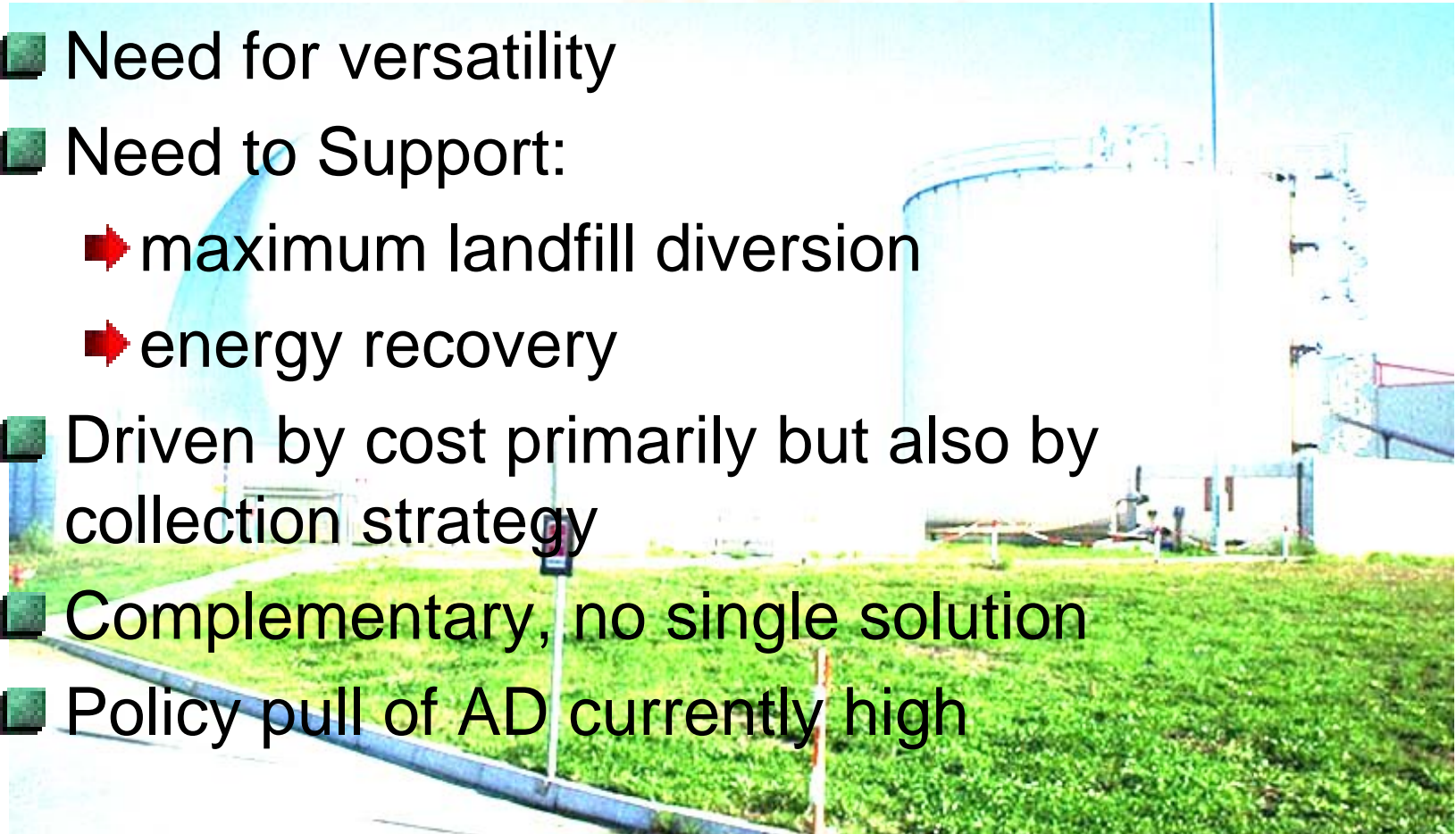


# The composting process



# Technology selection?

- Need for versatility
- Need to Support:
  - ➔ maximum landfill diversion
  - ➔ energy recovery
- Driven by cost primarily but also by collection strategy
- Complementary, no single solution
- Policy pull of AD currently high



# Process types

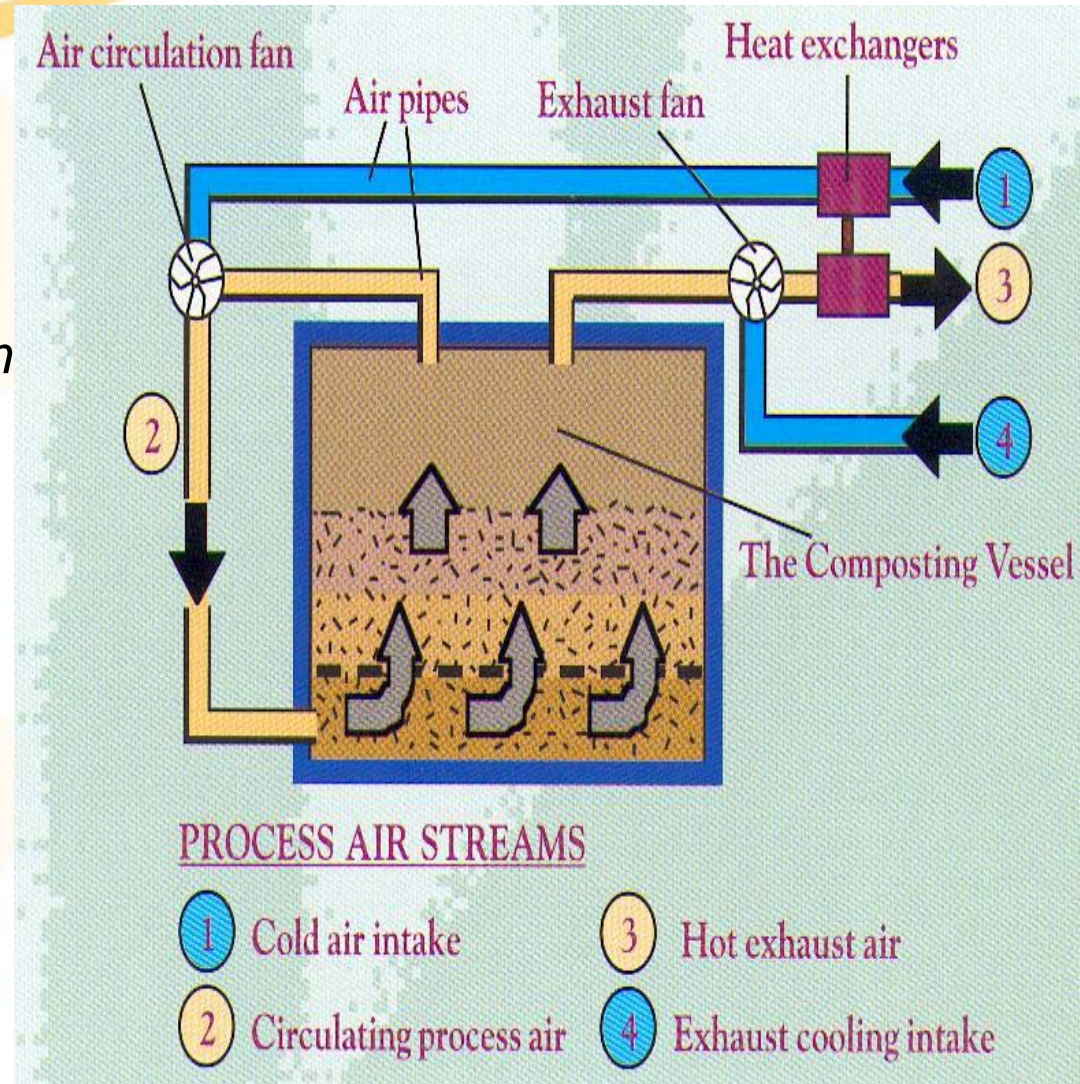
- **Home composting**
- **Open-air windrow**
  - Mainly green waste only from LAs
- **In-vessel composting**
  - Needs to comply with Animal By-Products Regulation 2003 (ABPR)
- **AD**
  - Wet, dry
- **MBT**

# Open air windrow



# In-vessel Composting

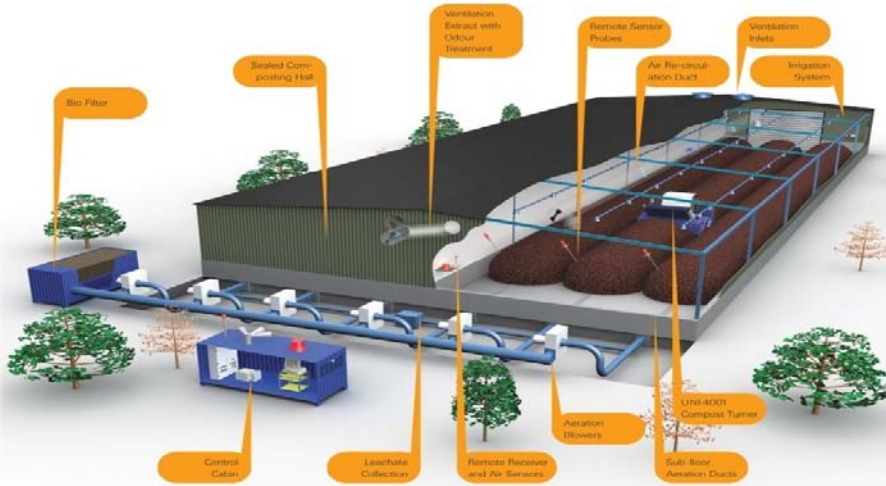
- Material is contained
  - *Optimised conditions*
  - *Accelerated decomposition*
- Process control
  - *Temperature*
  - *Oxygen*
  - *Moisture*
- Emission control
  - Biofilter
  - Positive aeration
  - Negative aeration





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# In-Vessel facilities



# Anaerobic Digestion



# External forces

Move towards enclosure, driven by:

- ➡ More food waste collections
- ➡ Regulatory pressures relating to odour and bioaerosols
- ➡ Nimby'ism pressure

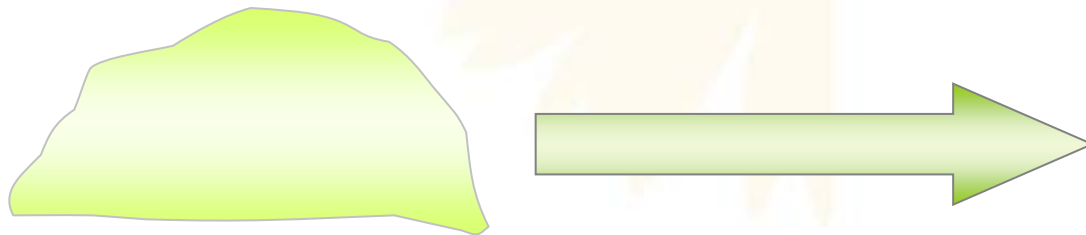
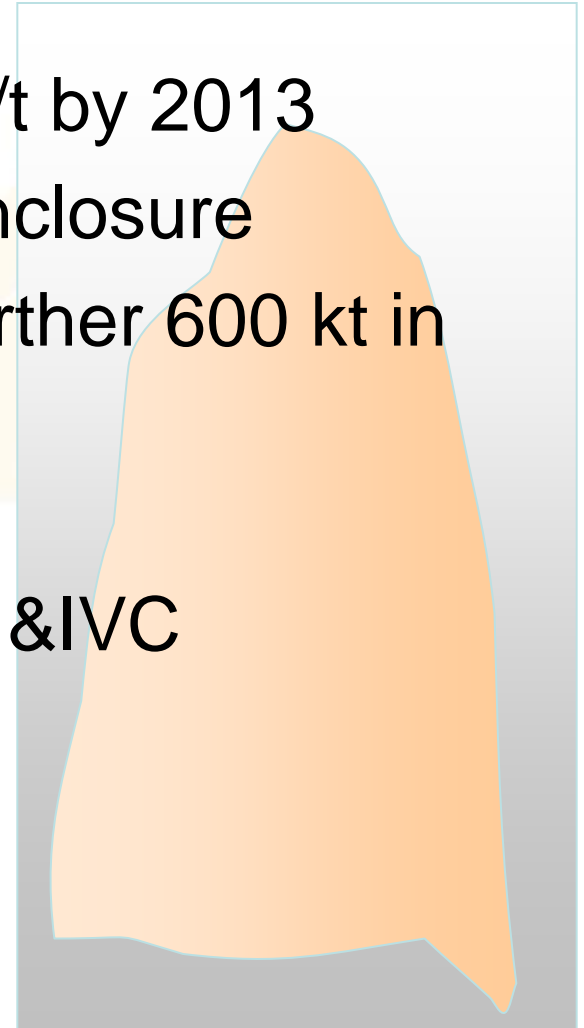
■ Proportionate rules

- ➡ Market dynamics changing away from OAW
- ➡ Slow planning approvals



# Where next? ~ I

- Tipping point with landfill at £72/t by 2013
- Changing landscape towards enclosure
- Industry expanding rapidly ~ Further 600 kt in development over next 5 years
- Significant growth in AD
- DEFRA funding to £10m for AD & IVC



# Where next ~ II

- Complementary technologies
- AD Task Force-emphasis on this technology
- Continued focus on quality of outputs
- Food waste focus in coming years
- Capacity build in the sector ongoing
- Producer rationalisation
- Reduction in # of smaller players
  - Higher entry level cost
  - Greater regulatory costs
  - Mergers and acquisitions growth



# Marketplace ~ I



- Primarily quality driven
  - ➔ PAS100 / PAS 110
- Must not forget CLO, appropriate markets
- Adding value will be essential as volume grows
- Confidence in compost programme
- Revisit of 2002 Risk Assessment - VLA
- Compost in Agriculture – Cranfield University
- Attitudinal survey on organic wastes to land - OU

# Challenges

- Collection and infrastructure requirements
- Waste supply chain
- Carbon accounting, how will this affect the sector?
- Food waste packaging... In or out?
- Siting for facilities
- Greater need for proportionate regulation
- Level playing field for all operators ~ consistency
- Out with the cowboy operators





# Further Challenges

- Skilling levels for the for the 'New Agenda'
- Greater need for technical competence
- Speed of planning consent to meet demand for new facilities
- Contaminants in feedstocks / Education initiatives



**NOT MANY!**

# Conclusion

- Opportunities abound
- No single solution/bespoke
- Need for regulation to support progress
- Learn from continental Europe - No need for reinvention!
- Possible ban on organics to landfill in the future
- Sector is evolving fast



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# Thank you for listening

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