



**Case studies and lessons learnt from small, middle and large scale biological treatment facilities by real life projects**

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# Small size treatment facility

BAV Freistadt, Austria

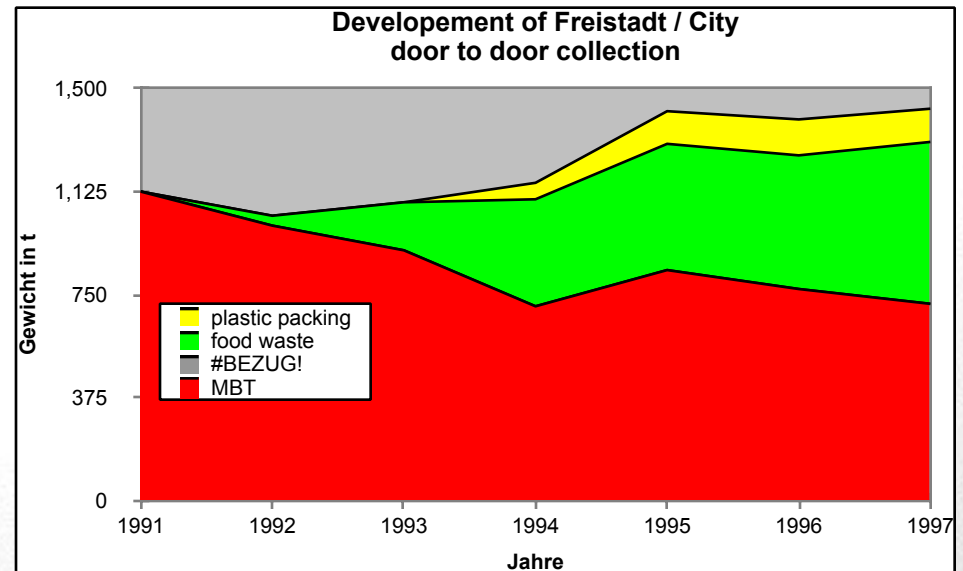
- ▶ Open windrow composting since 1991
- ▶ Green waste kitchen waste collection
- ▶ Tractor-pulled turner
- ▶ Small Biowaste bin for each household
- ▶ Collection by composting plant operator (farmer)
- ▶ Training for public



# Small size treatment facility

## Separate waste collection

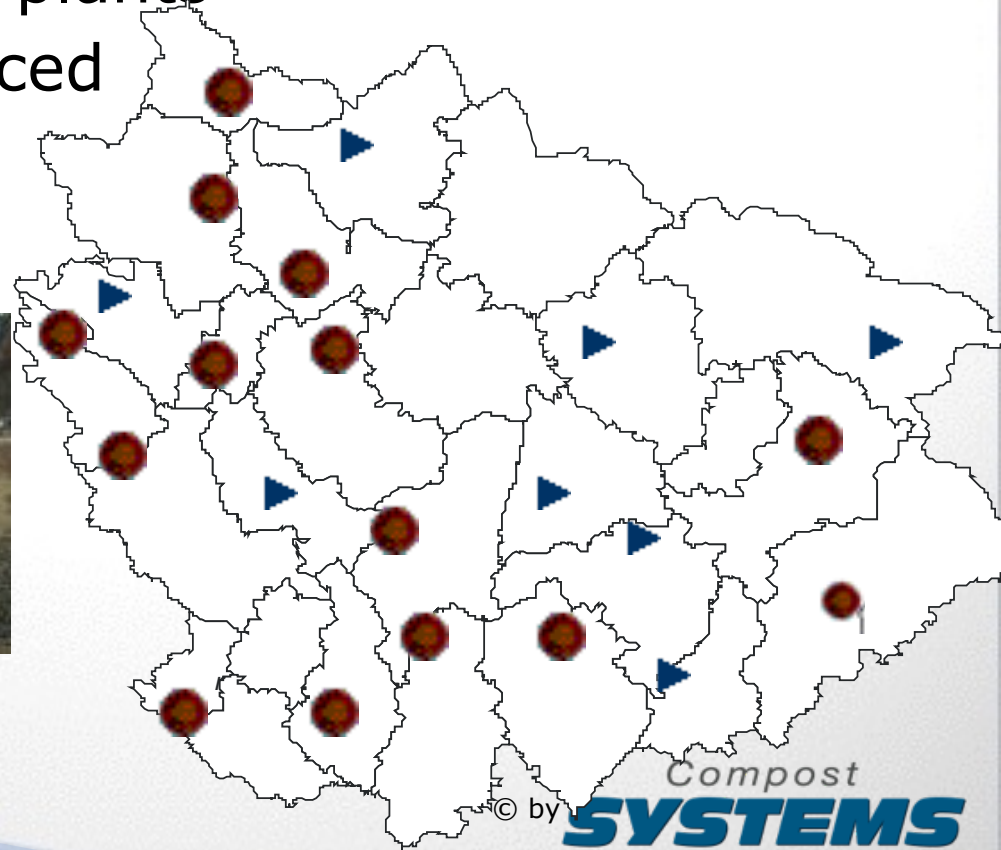
- ▶ 1/3 less residual waste
- ▶ Collection interval = 2 weeks
- ▶ Reduced disposal cost



# Small size treatment facility

Development until 2014

- ▶ Area-wide collection of kitchen waste
- ▶ 14 paved composting plants (600 - 5000 m<sup>3</sup>/a)
- ▶ 8 unpaved composting plants
- ▶ Quality compost produced mostly for agriculture





# Small size treatment facility

## Lessons learnt - agricultural composting

- ▶ Low collection cost
- ▶ Extremely low contamination of the Biowaste
- ▶ Short transportation
- ▶ Low/No problem process (small farm operation)
- ▶ Compost used by farmer
- ▶ Limitations to climate conditions (winter, rain)



# Middle size treatment facility

Seiringer, Austria

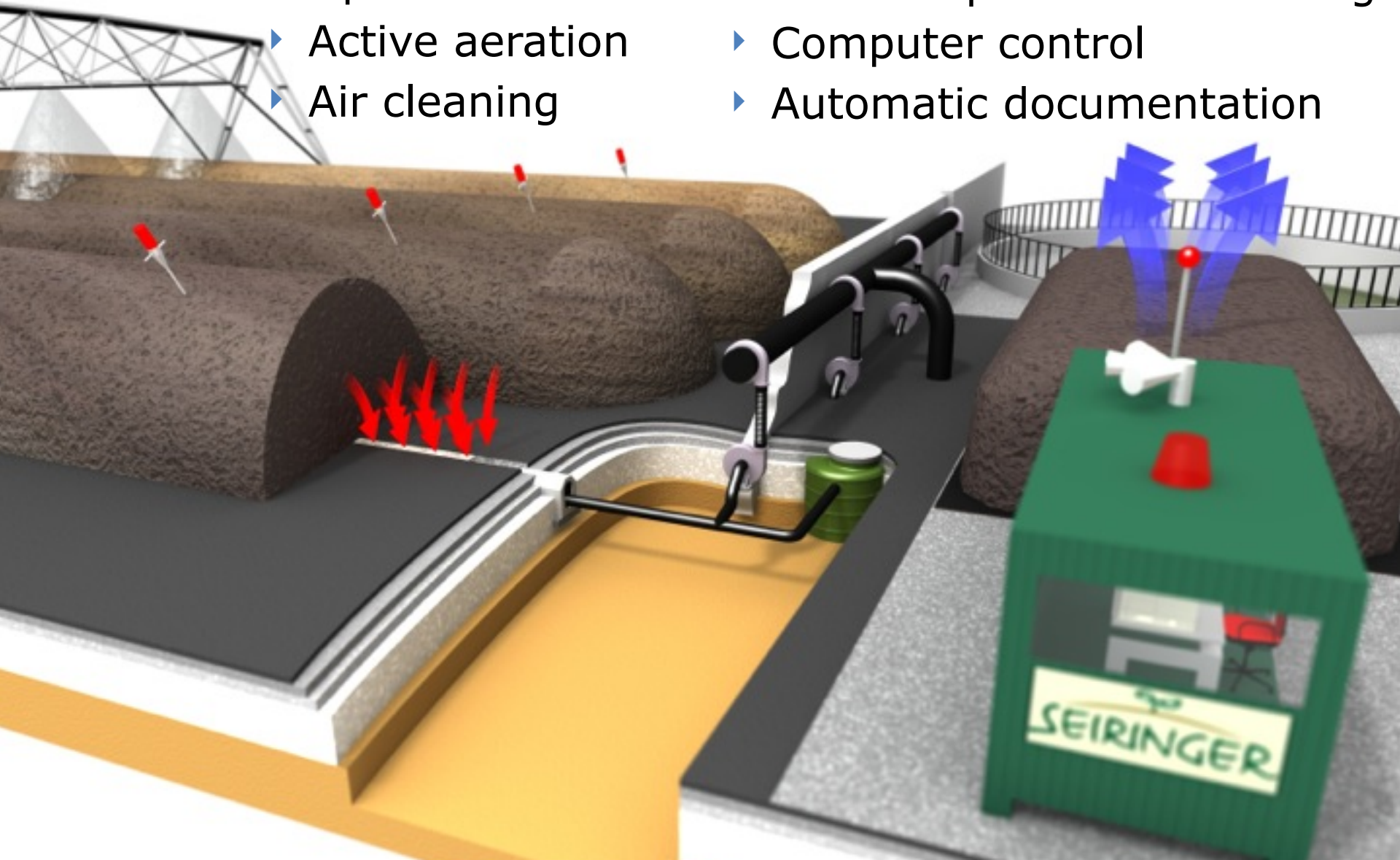
- ▶ Windrow composting plant
- ▶ Composting of
  - Biowaste (7,000 t/a)
  - Sewage sludge (16,000 t/a)
- ▶ Tractor-powered turning machine (TracTurn)



# Middle size treatment facility

## Process

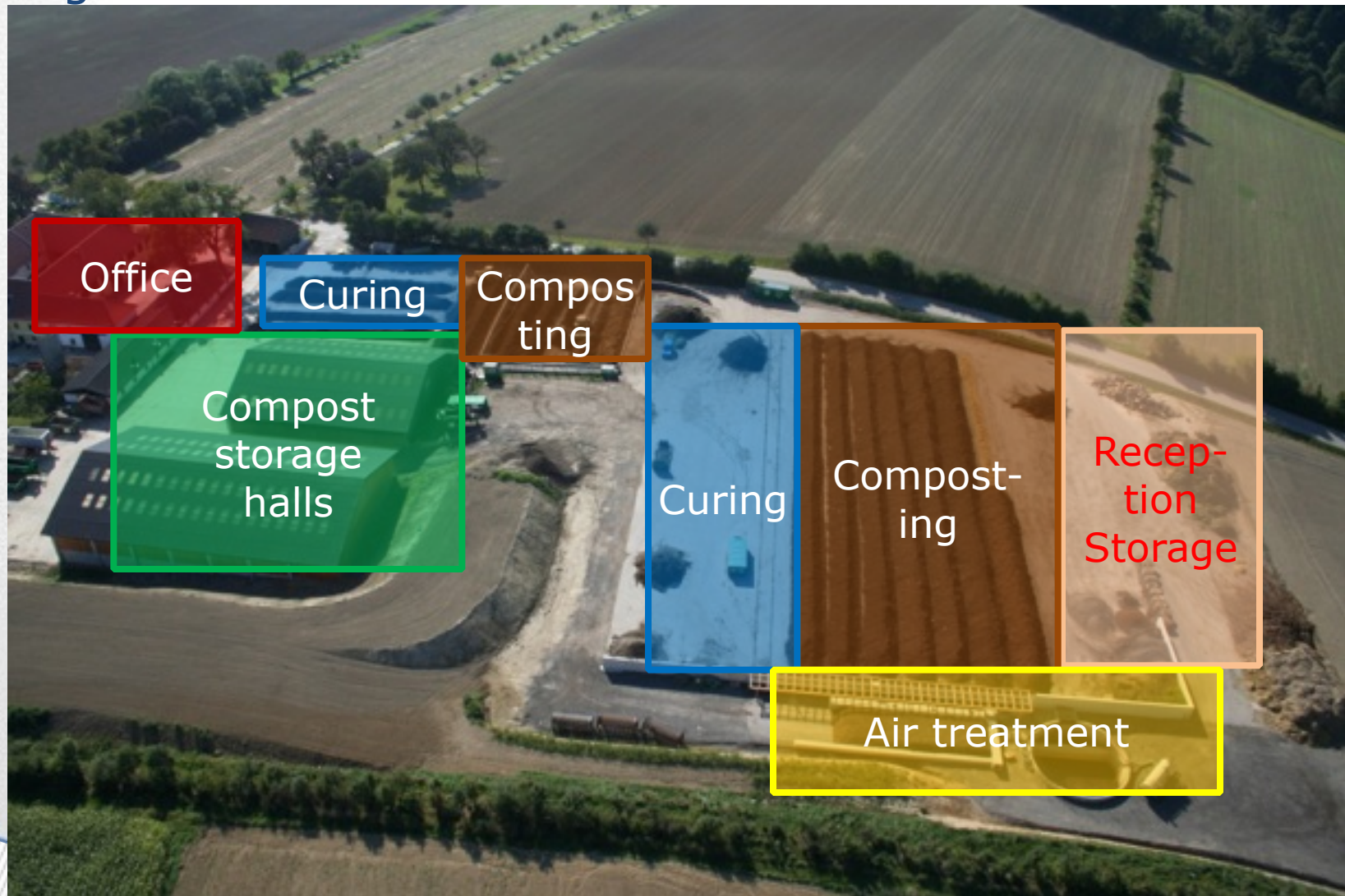
- ▶ Open windrows
- ▶ Active aeration
- ▶ Air cleaning
- ▶ Wireless process monitoring
- ▶ Computer control
- ▶ Automatic documentation





# Middle size treatment facility

## Logistics





# Middle size treatment facility

## Lessons learnt

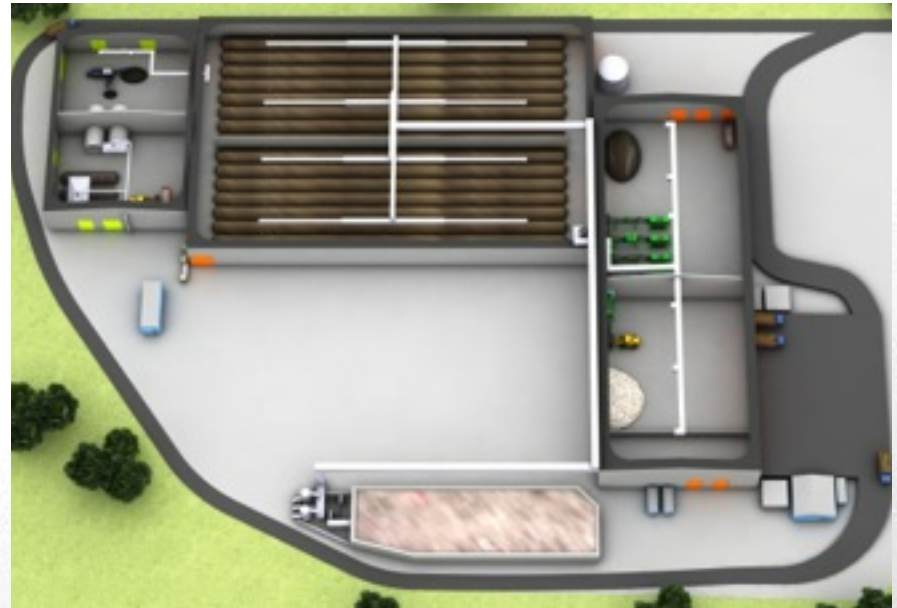
- ▶ Effective and optimised industrial process
- ▶ Production of various compost products
- ▶ Secured, all year production
- ▶ Servicing population approx. 60.000 people
- ▶ Higher contamination of the Biowaste
- ▶ Danger of odour



# Large size treatment facility

MBT Avonmouth (UK)

- ▶ Enclosed MBT plant (newEARTH technology)
- ▶ Windrow composting
- ▶ Stabilisation of residual waste (approx. 200,000t/a)



# Large size treatment facility

## Process

- ▶ Enclosed buildings
- ▶ Housed windrow process
- ▶ Controlled air handling and air treatment
- ▶ Automated process (monitoring, control, reporting)
- ▶ Short (4 week) intensive composting process





# Large treatment facility

## Lessons learnt

- ▶ IPPC licensing required
- ▶ High cost
- ▶ High waste contamination
- ▶ Controlled industrial process
- ▶ Full traceability
- ▶ High skill maintenance requirements
  - Cleaning procedures
  - Health and safety issues
  - Corrosion
  - Reduced plant performance during maintenance





**Thank you for your attention!**

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