



**novis** ENERGY DEVELOPMENT PARTNERS

## **Money from Waste**

2011

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# Dry waste is money

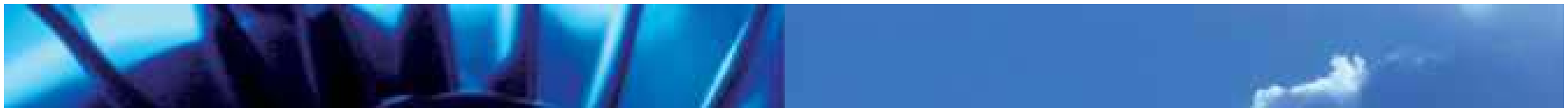


## Generate electricity out of biomass

### Example of a 10 MW installation

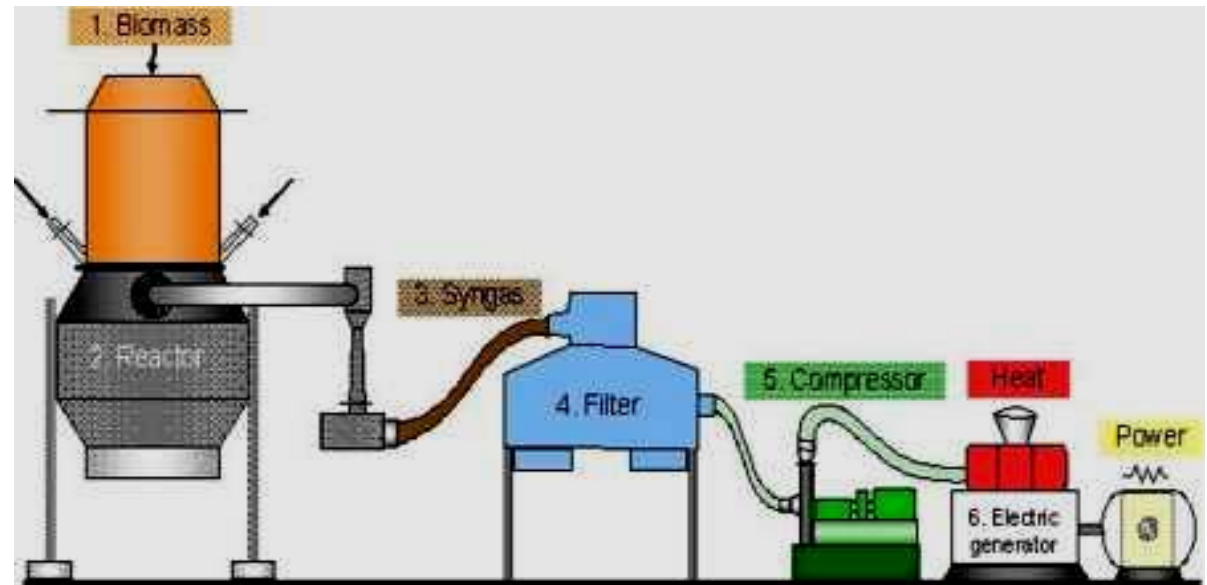
- a reliable and proven gasification technology (700 installations worldwide)
- turns any **agro residua** into a clean producer gas in order to produce electricity with the help of adopted ordinary genets running without any diesel.

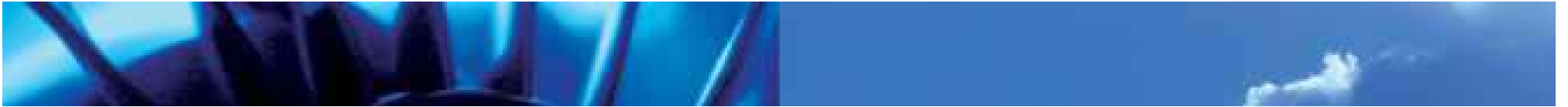




## Gasification – How it works

The gasification plant is a semi automated system. The biomass is grounded in a press and then placed automatically in a reactor (1). There, the biomass is burned incompletely (2) and the ash is removed automatically. The emerging synthetic gas (3) is piped into a filter for cleaning (4) and then into a compressor (5). The compressed gas works as a fuel to operate an electric generator (6). Thus, heat and electricity are created.





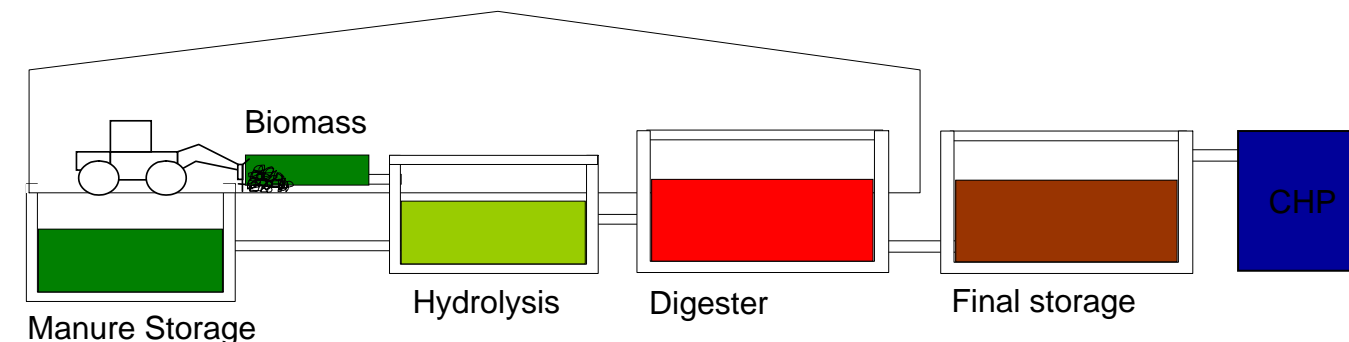
**Wet waste is money too!**



## Sophisticated 2-staged biogas production

**2-stage biogas plants** (High performance plants)

Biomass → hopper → hydrolysis → digester → storage tank



→ the different stages of the digestion process take place in two separated tanks

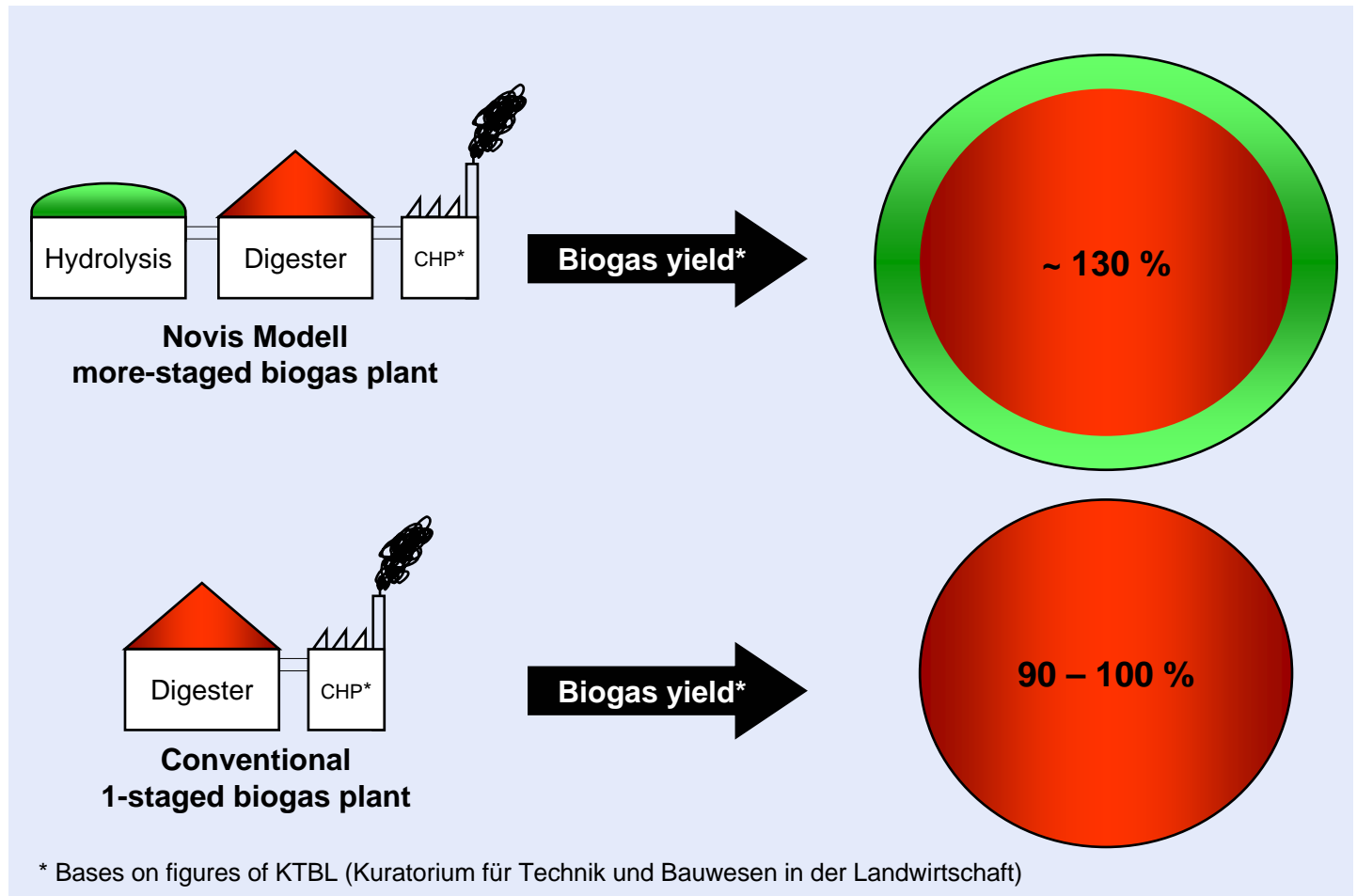
The Rottaler Model High Performance Biogas Plant (with hydrolysis, acidification, methanisation) is a high performance biogas system, which guarantees 20% higher biogas yield from the feedstock in comparison to 1-stage biogas plants

## Higher biogas yield

- Biogas plants of the Novis Modell are based on separated process steps of the biomass digestion.
- The separation targets an optimized biogas yield, while providing perfect conditions (pH value, temperature) for all process steps.

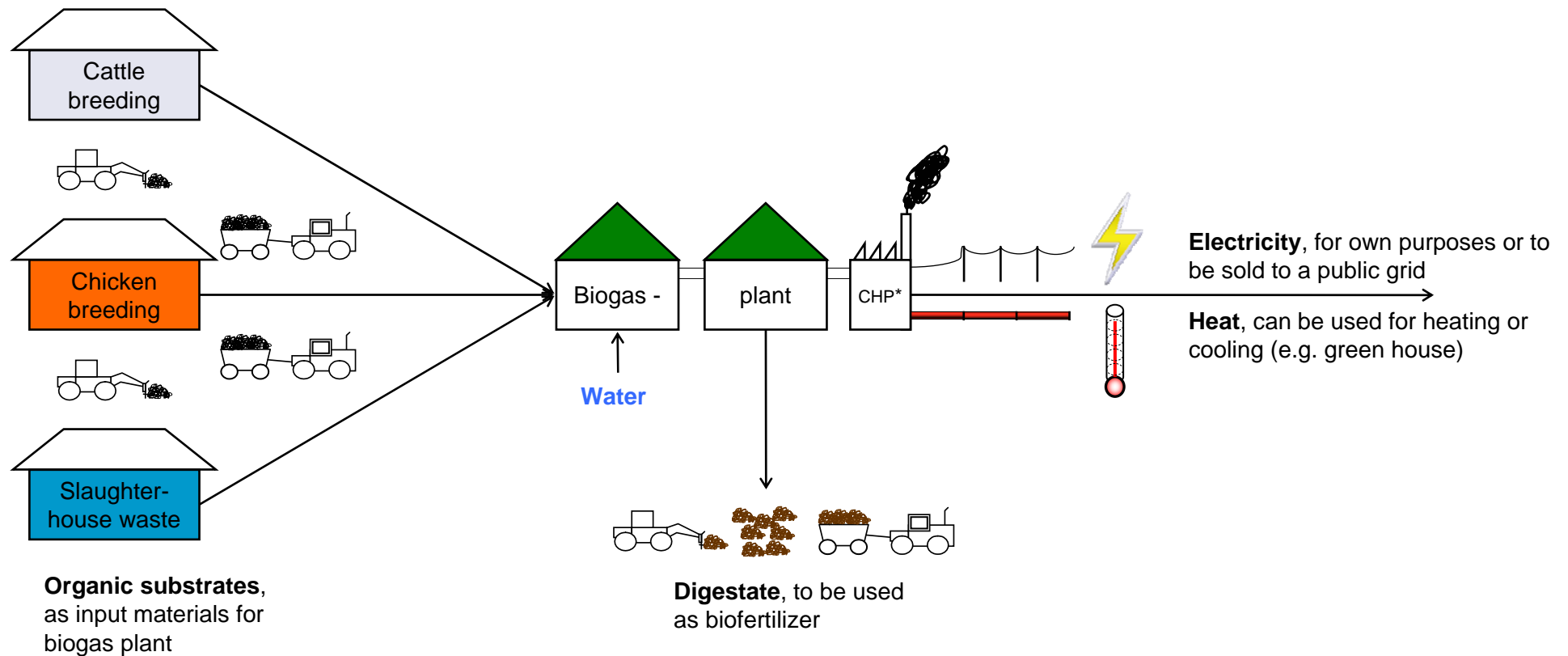
### **RESULT:**

**It is possible to generate a higher biogas yield of up to 30 % out of the same amount of input materials!**



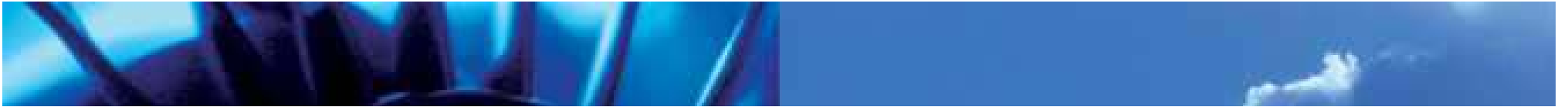
# Biogas process and technology (1/3)

Scheme: Input and output of biogas process

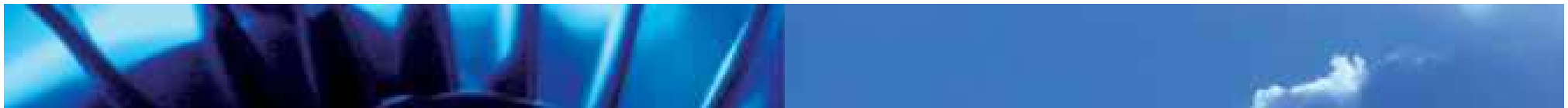


\* CHP = Combined Heat and Power Plant



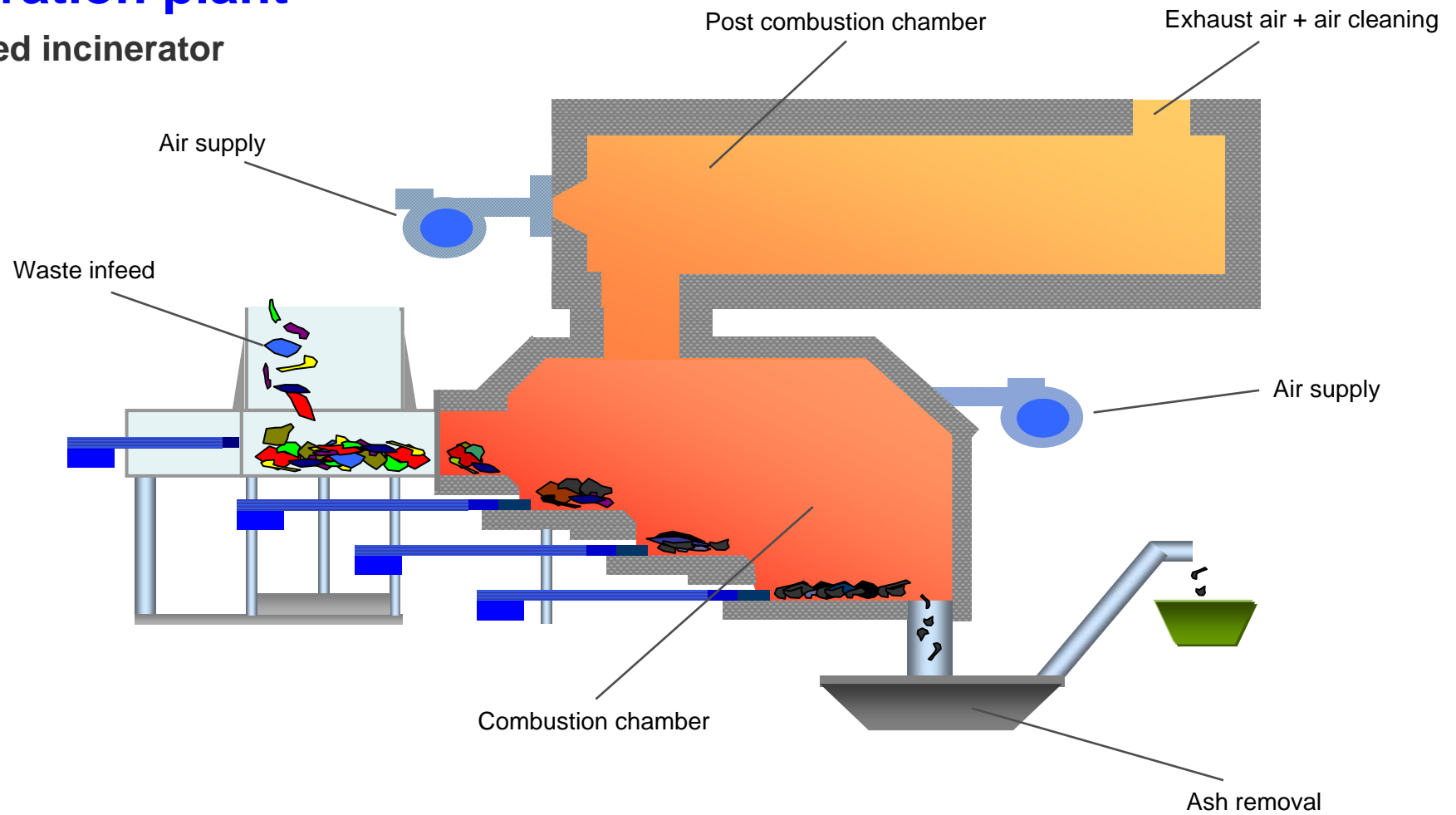


# **Municipal solid waste is pure money!**



# Incineration plant

## Moved bed incinerator





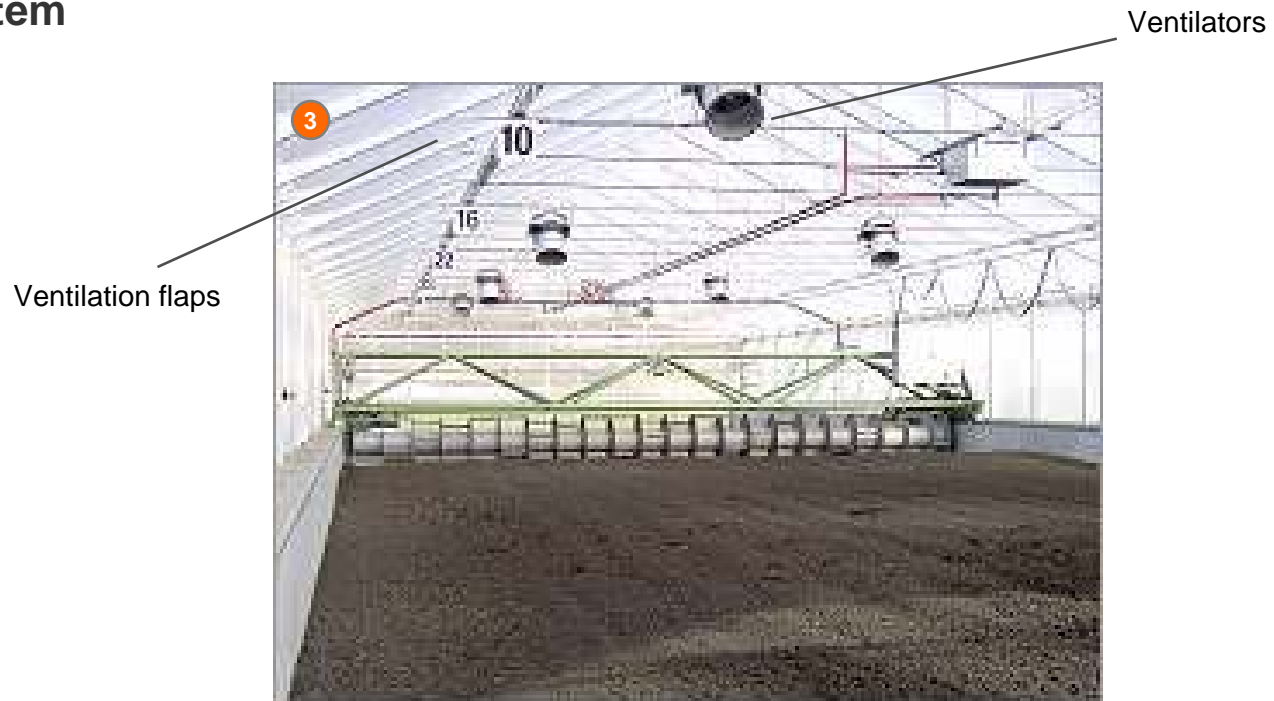
# Even sewage sludge is money!

(Pekunia non olet)



# Solar sewage sludge drying

## Ventilation system





# Solar sewage sludge drying

Turn over machine

Transport and ventilation through the rotating turn over machine



Sewage sludge



## Contact

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