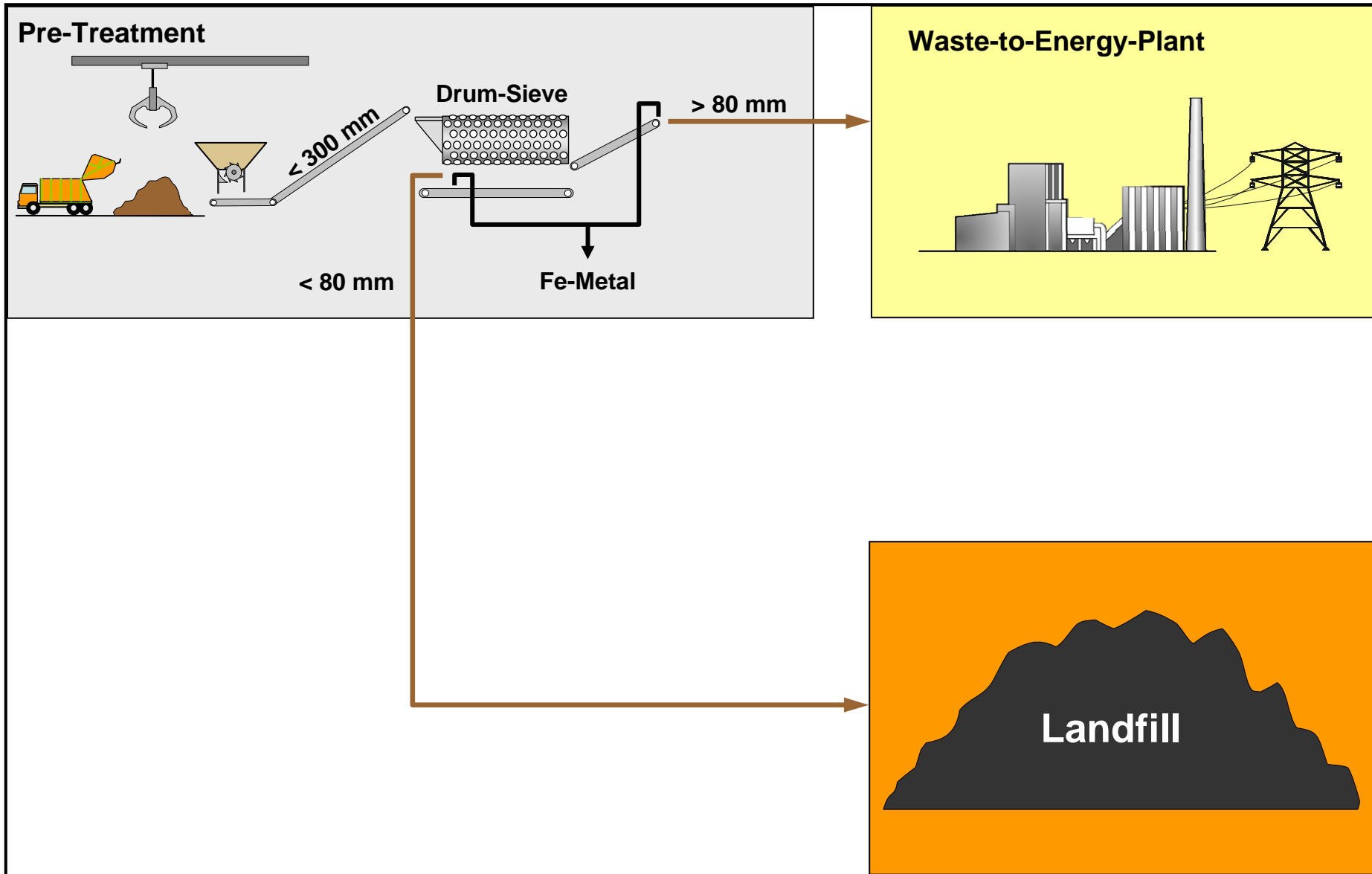


# **MBT Concepts for a Sustainable Development**

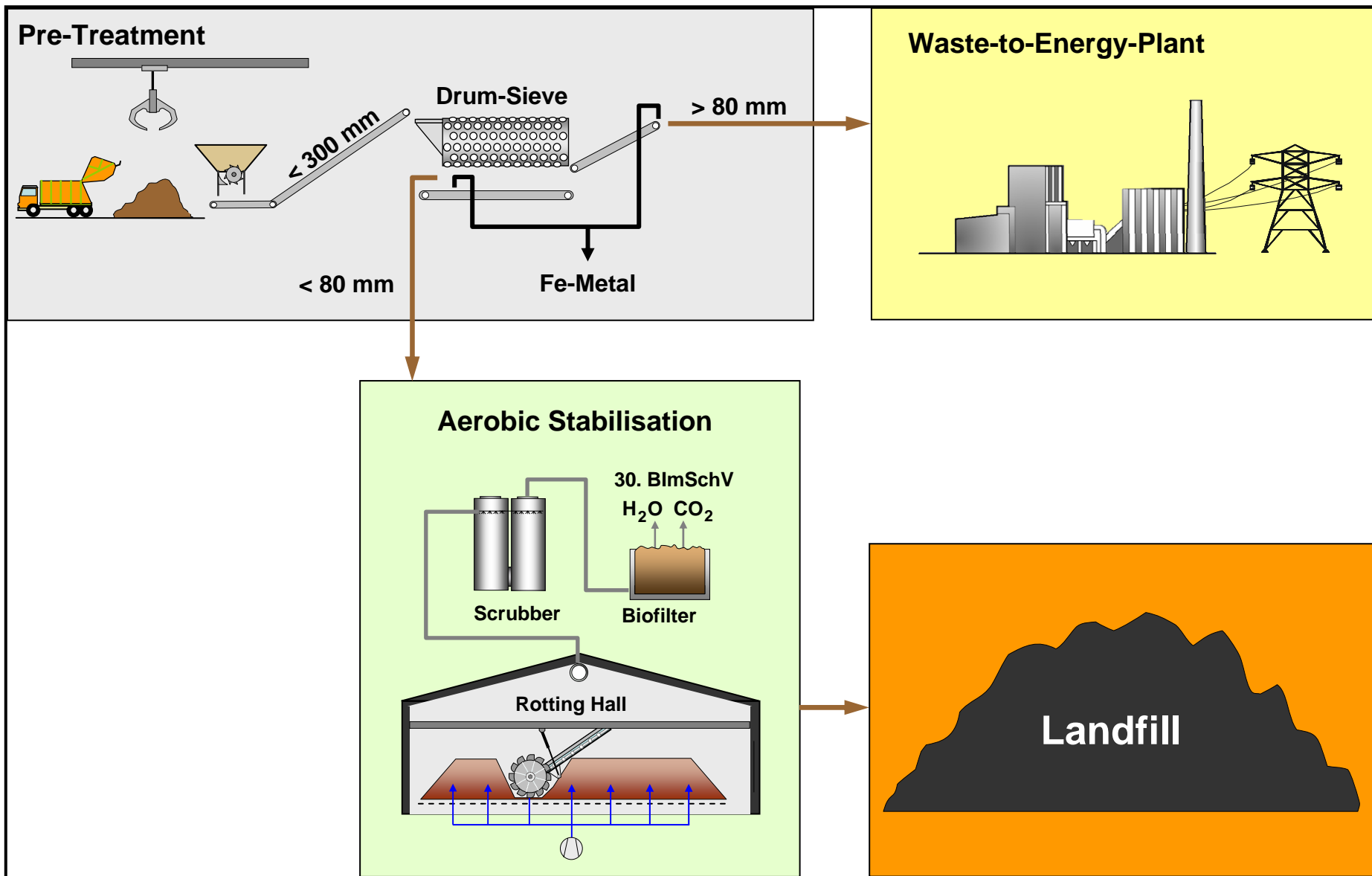
**Venice 2008  
Second International Symposium on Energy from  
Biomass and Waste**

**Dipl.- Ing. Reinhard Schu  
Dipl.- Biol. Kirsten Schu  
EcoEnergy Gesellschaft für  
Energie- und Umwelttechnik mbH  
Walkenried, Germany**

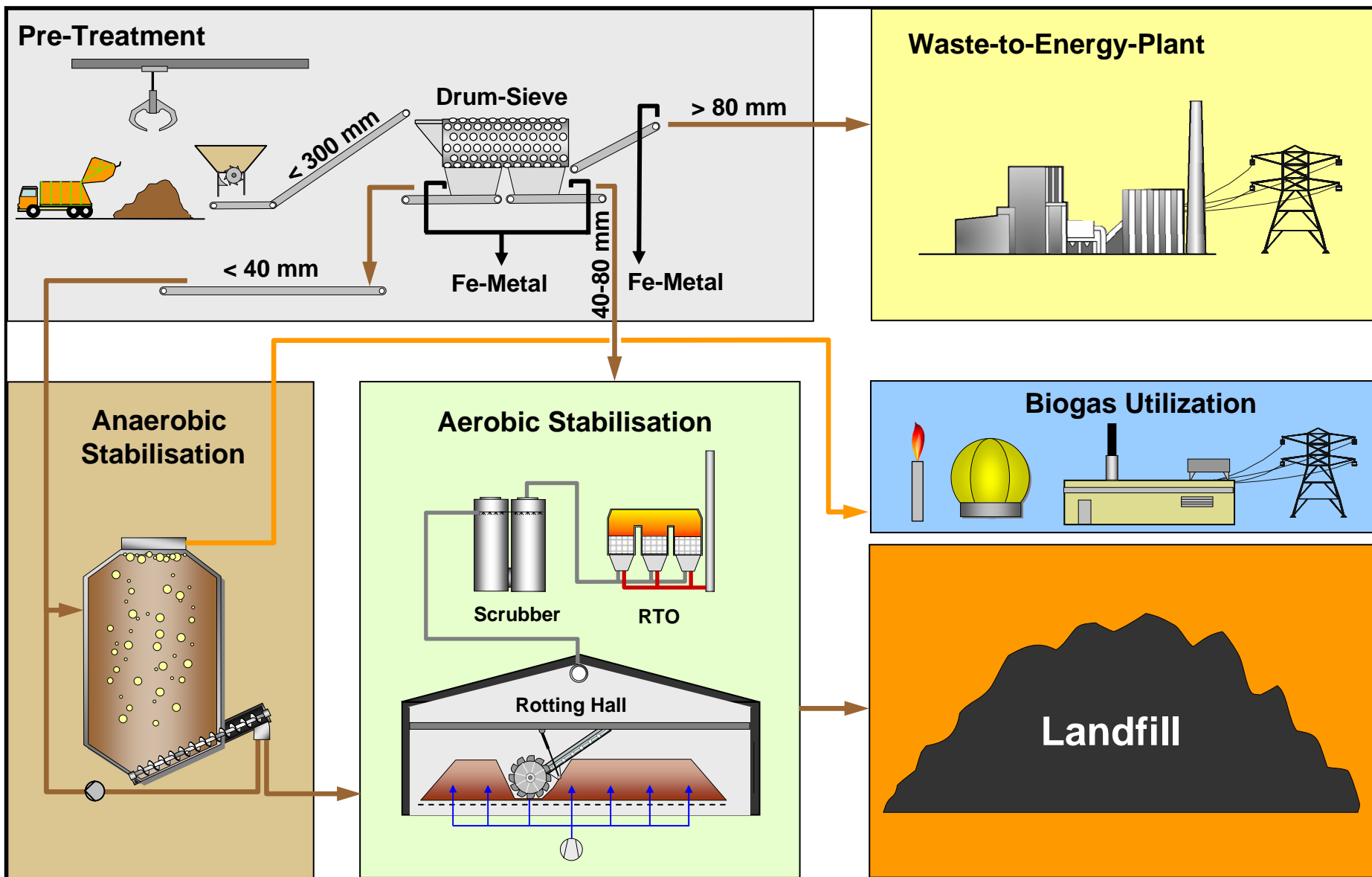
# Simple Mechanical Pre-Treatment for Landfill until 2005



# MBT until 2005 – Demonstration Projects as Base for Equivalence

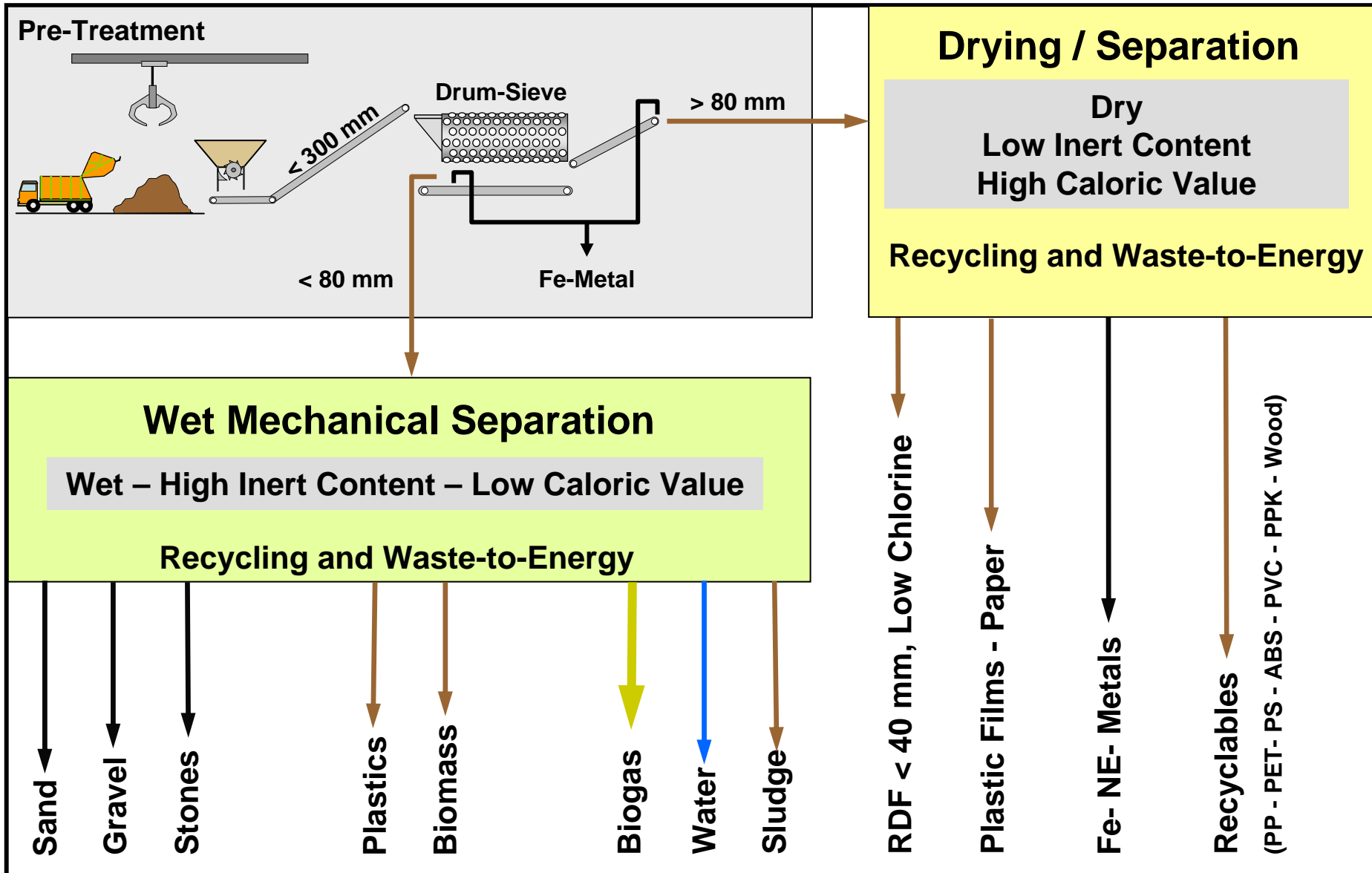


# MBT 2005 to 2020 – German Concept for Mechanical-Biological Treatment

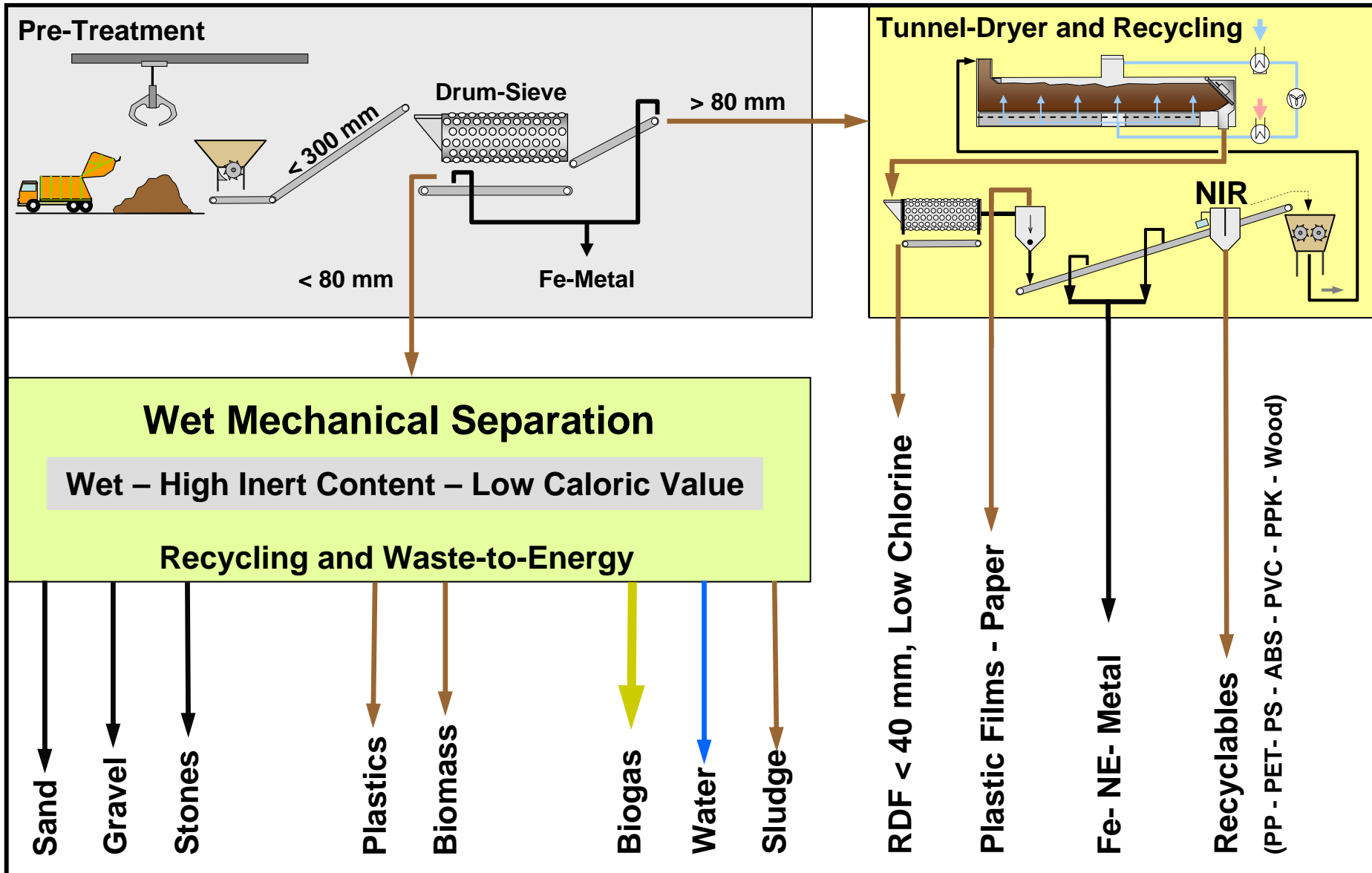




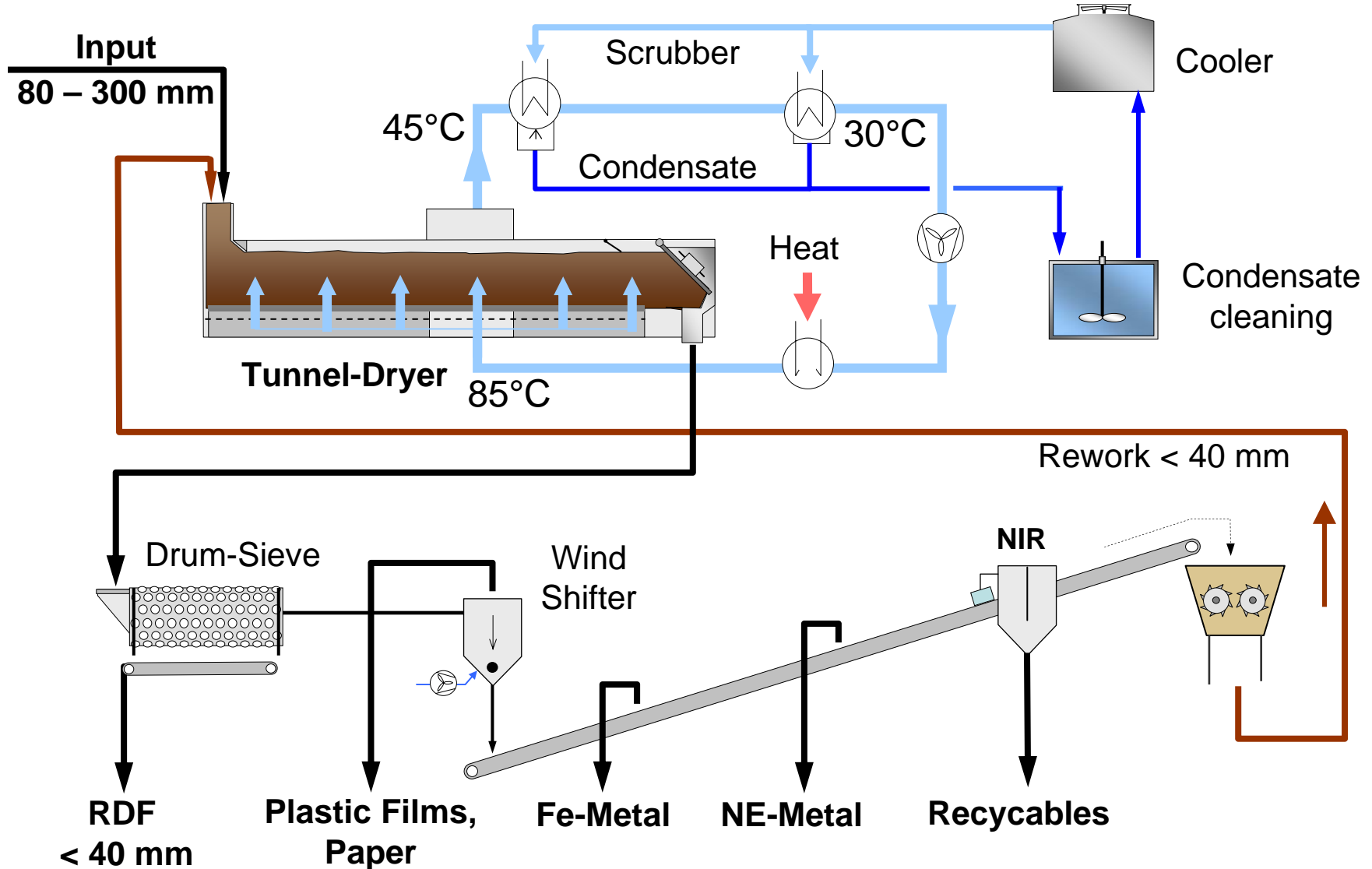
# Selective Shredding and 1<sup>st</sup> Step for Mass Splitting



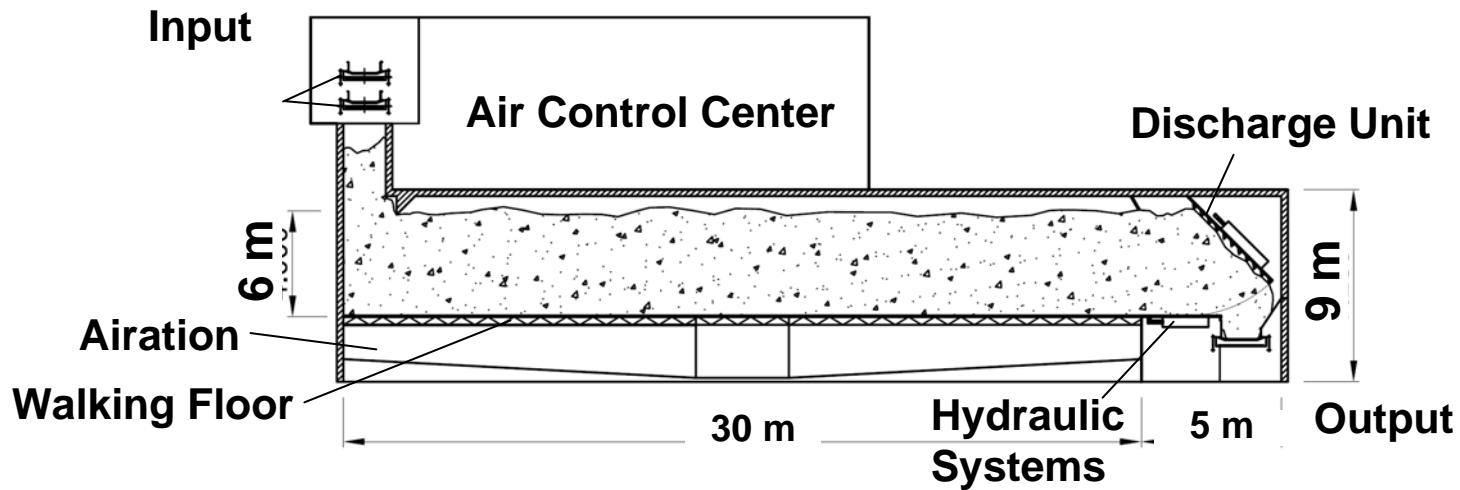
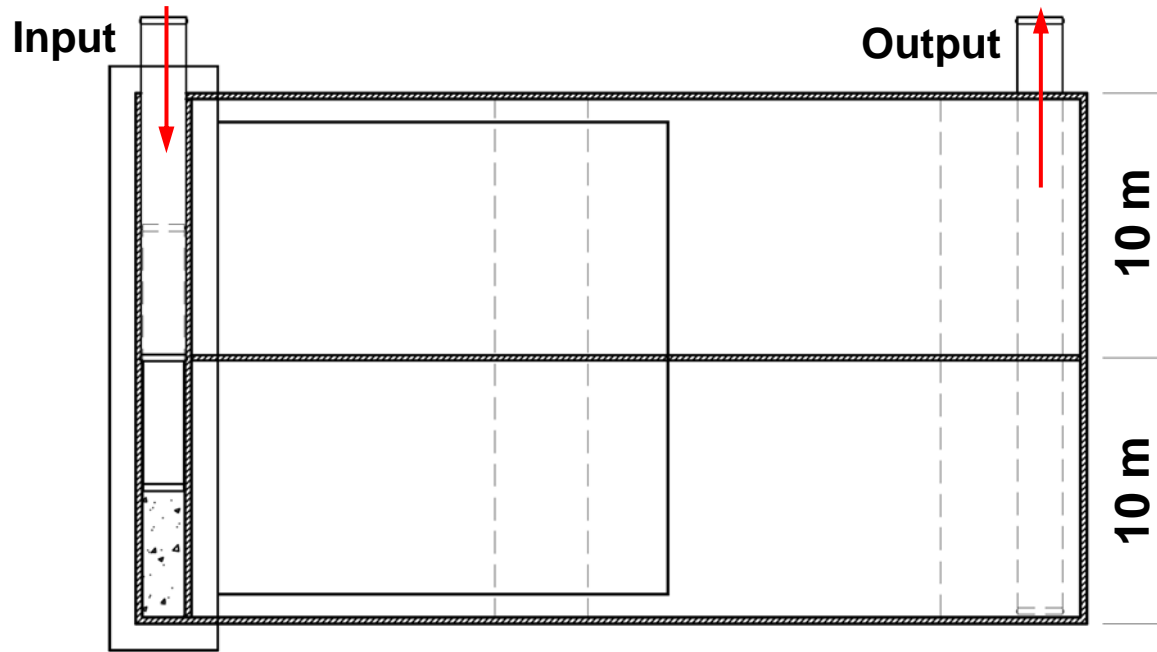
# Selective Shredding and 1<sup>st</sup> Step for Mass Splitting



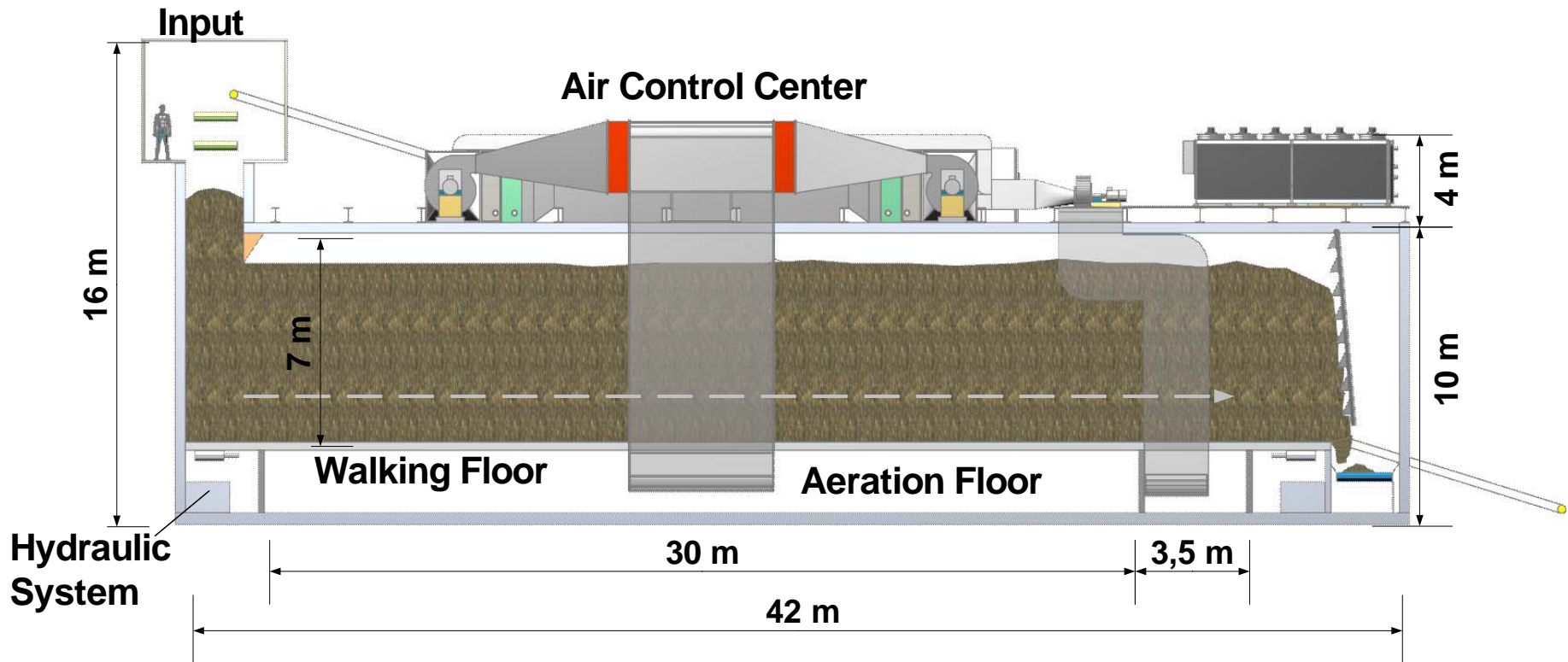
# Tunnel-Dryer for Industrial Waste Recycling



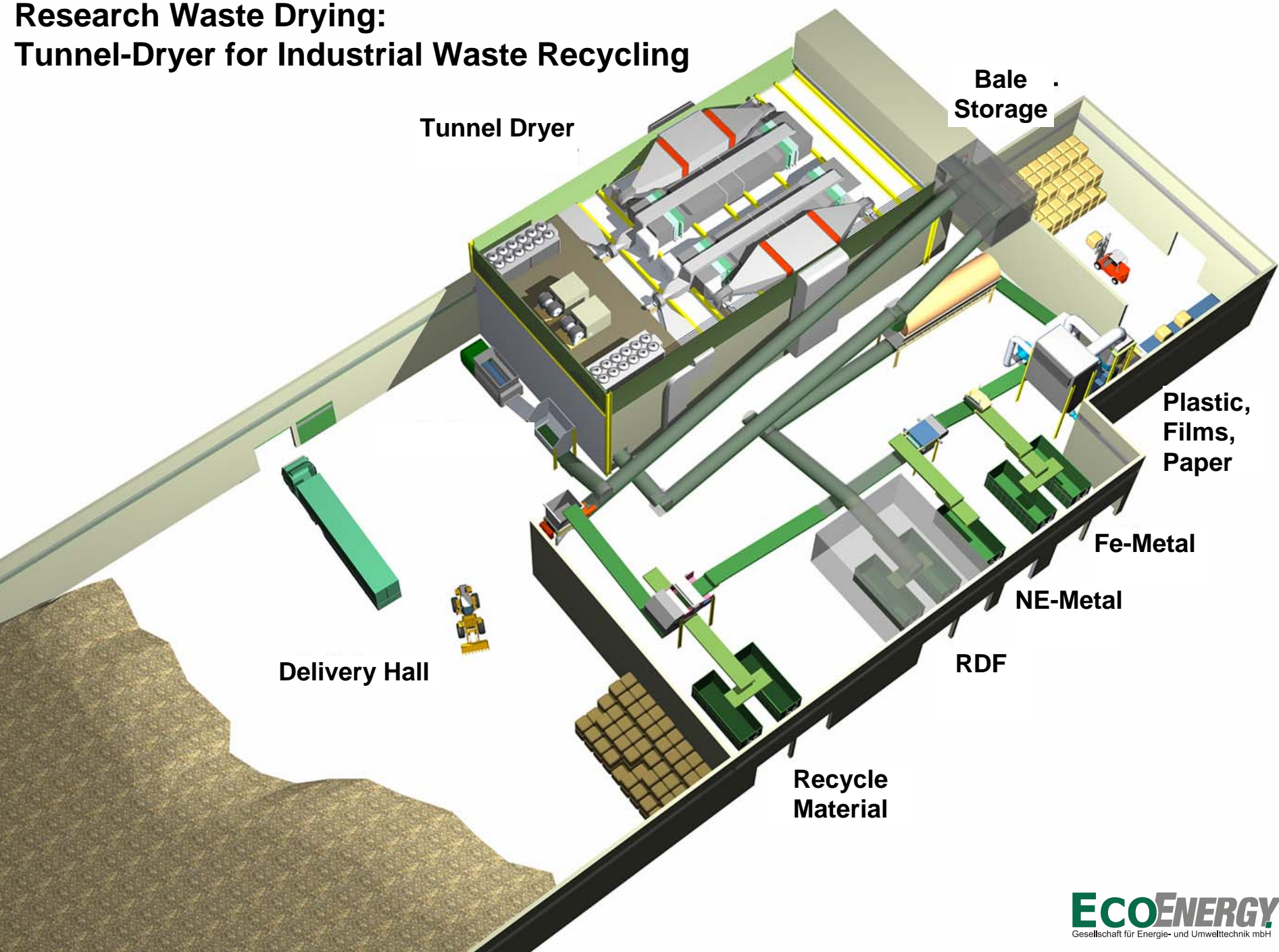
# Tunnel-Dryer Layout



# Research Waste Drying: Tunnel-Dryer for Industrial Waste Recycling

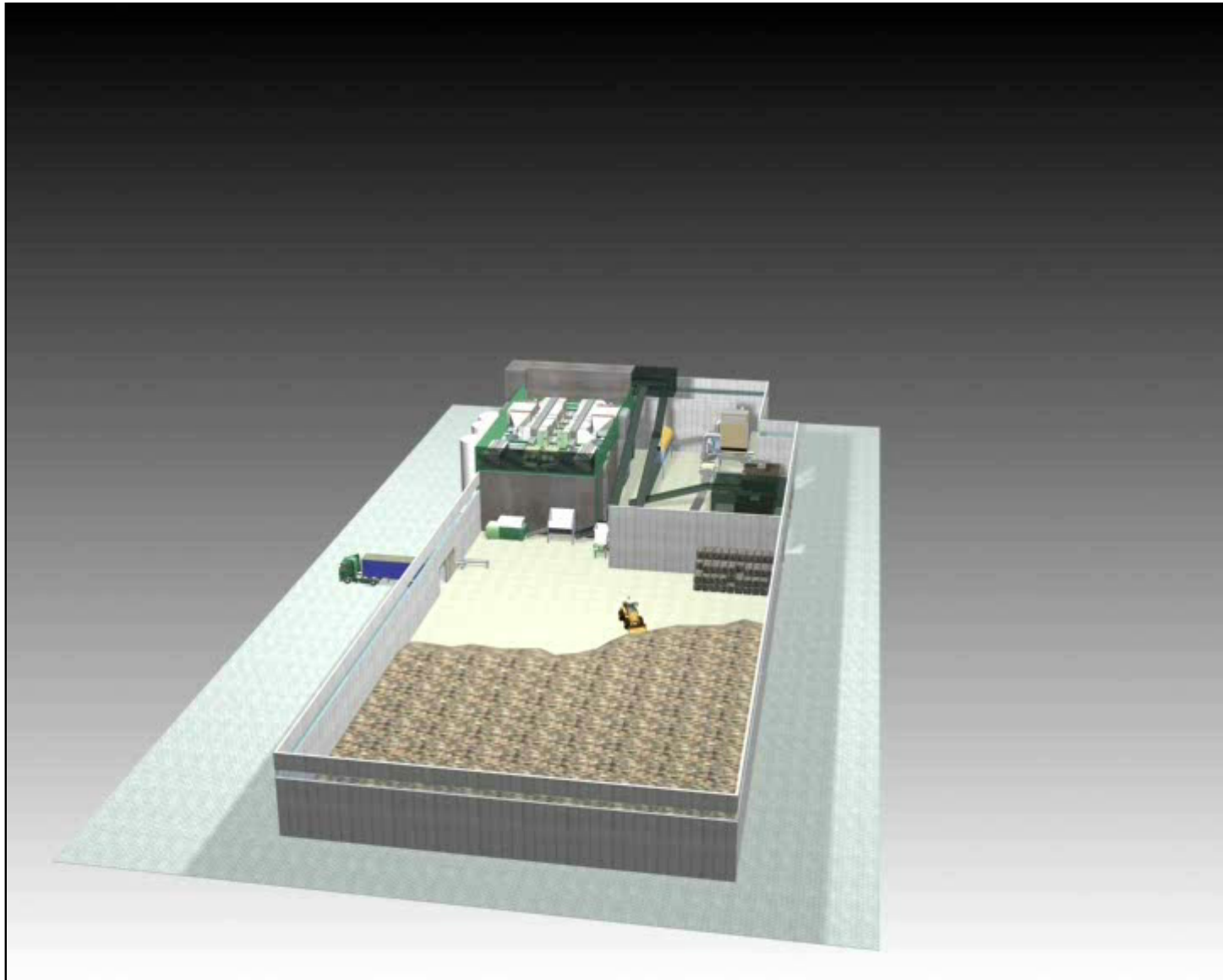


# Research Waste Drying: Tunnel-Dryer for Industrial Waste Recycling

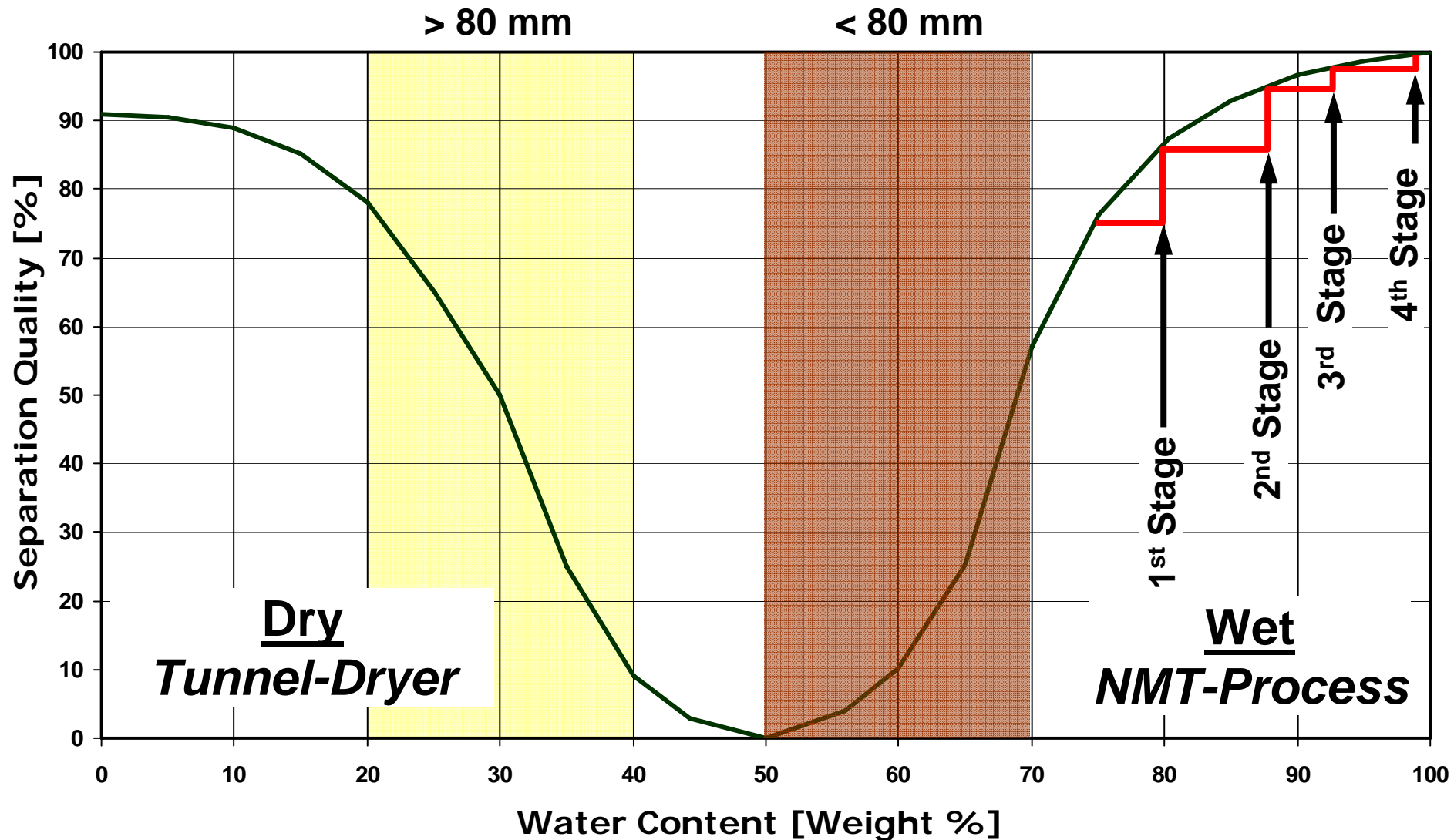




# Animation: Tunnel dryer integrated in Recycling Plant

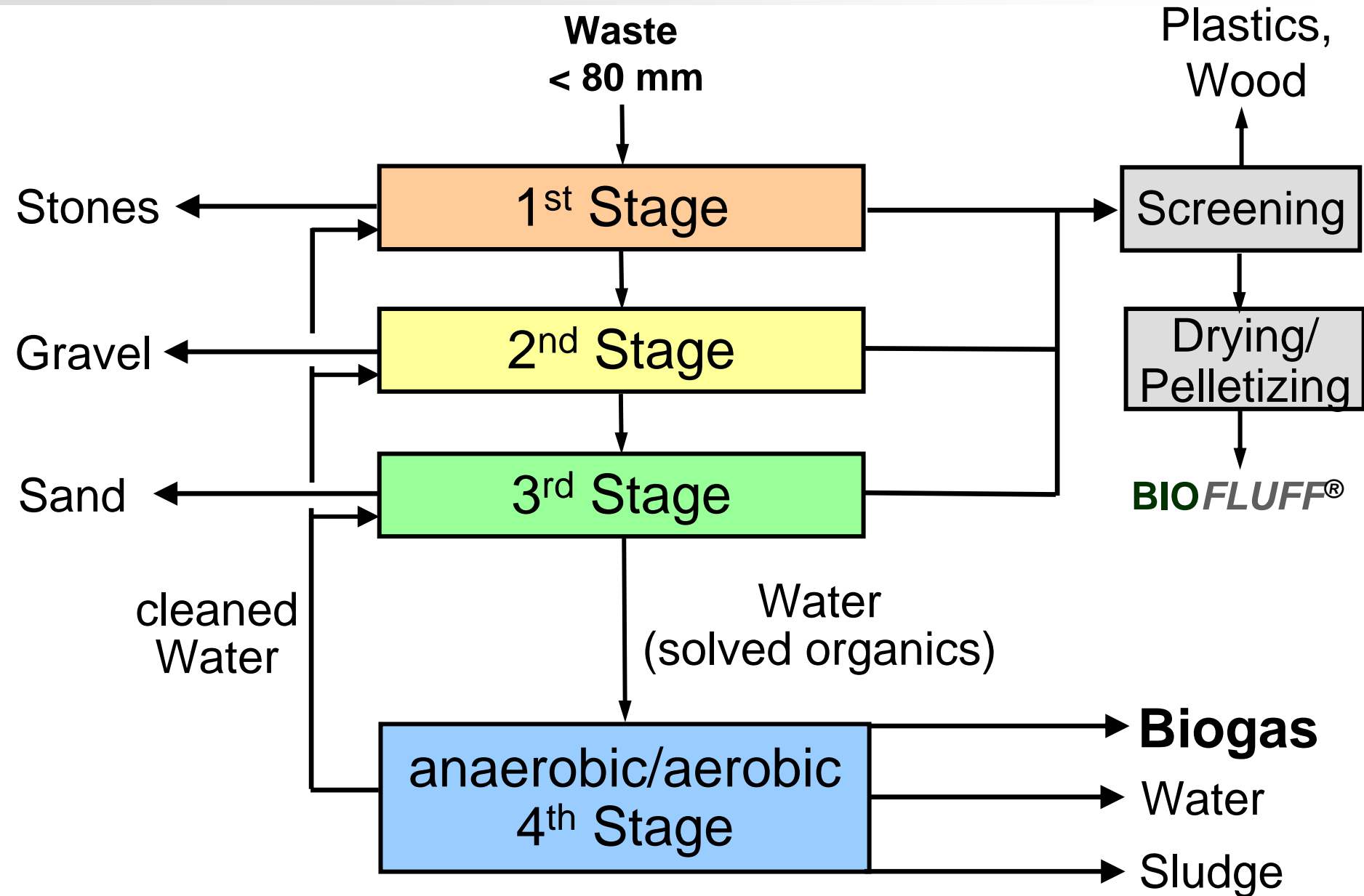


# Separation of Contraries – HOW ? - Wet or Dry ?

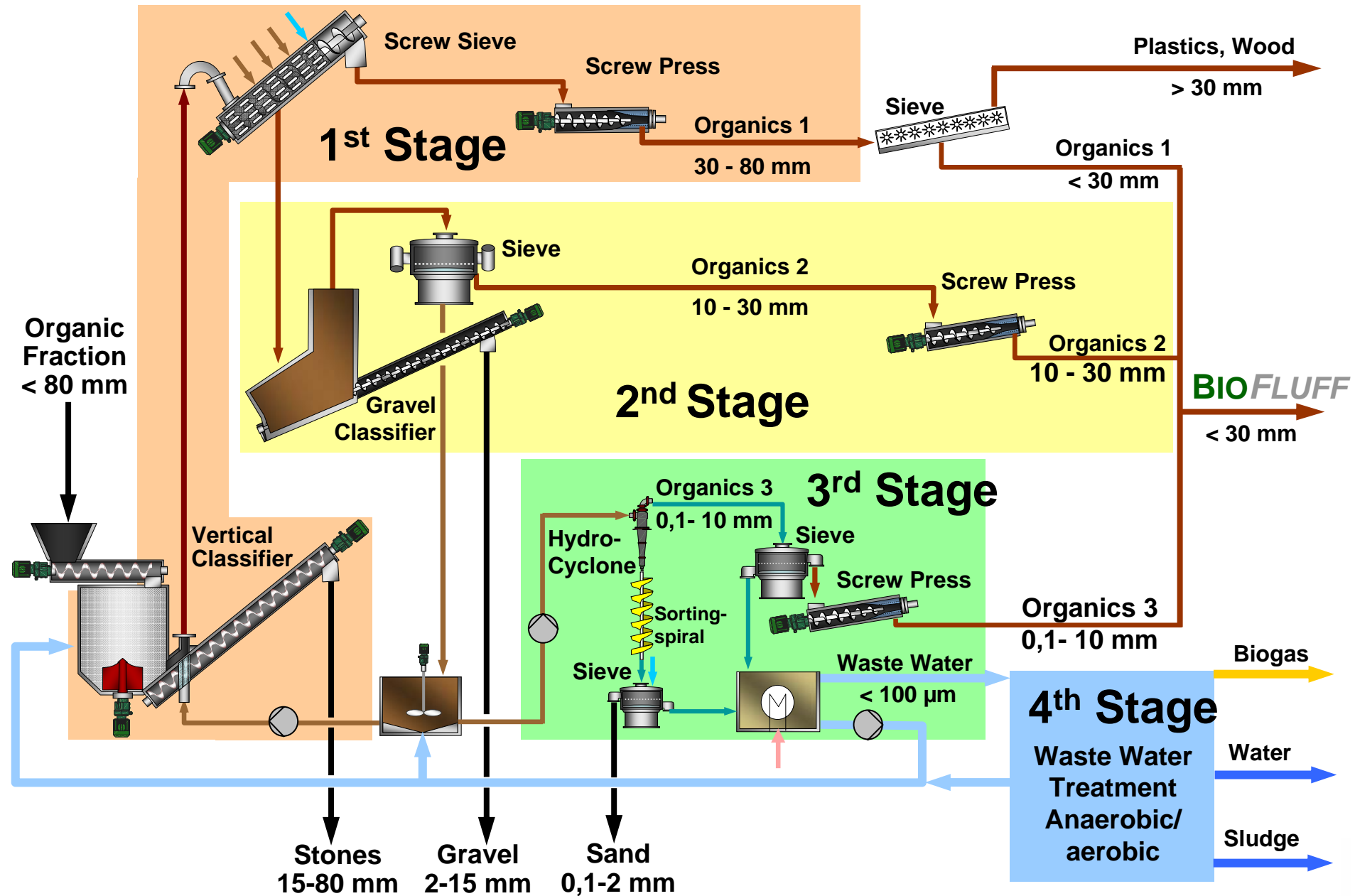


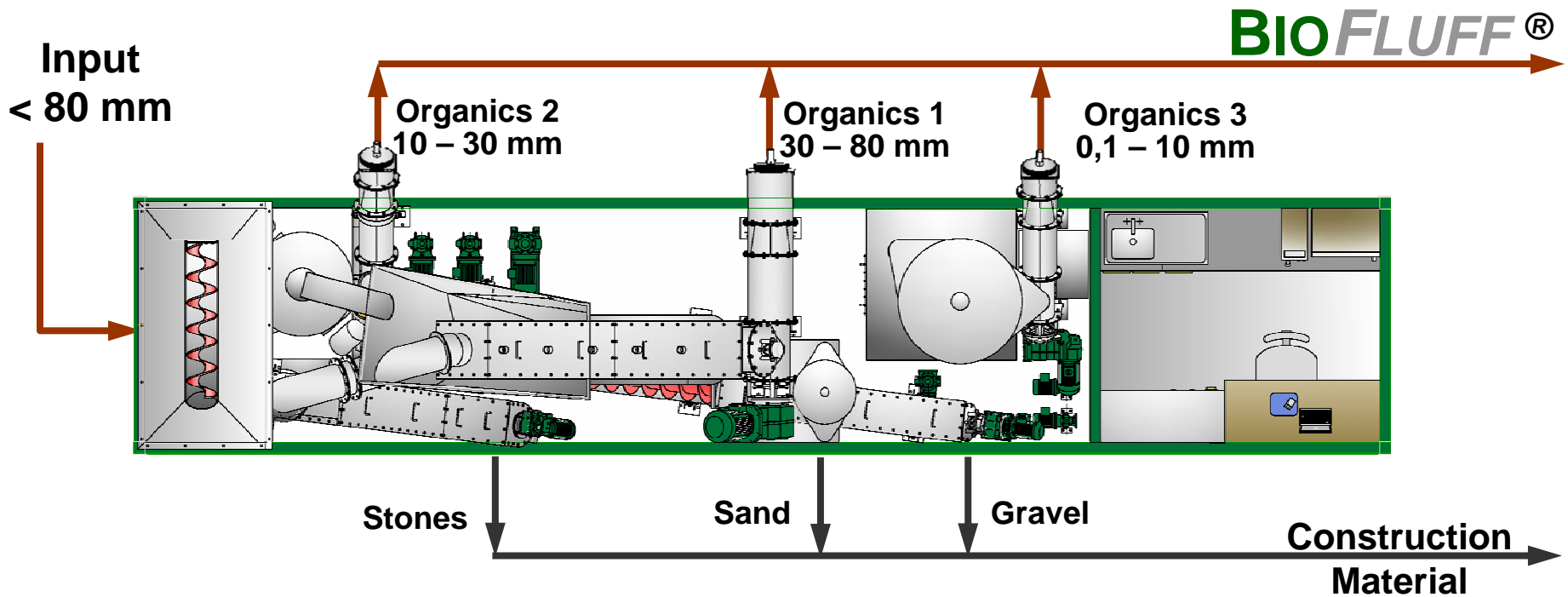


## 4-Stage-wet-Separation

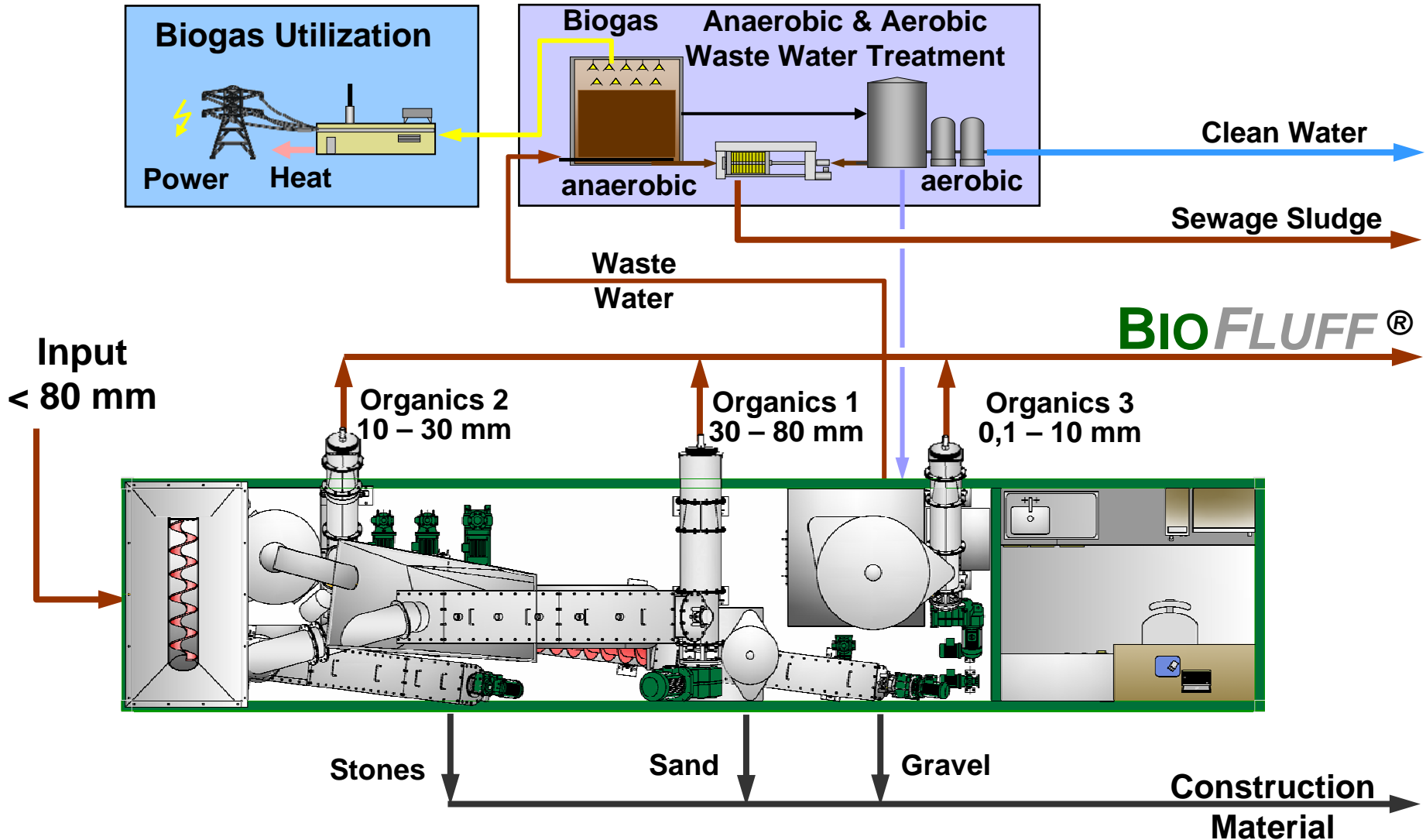


# Pilot Plant NMT-Process – Process Flow Diagram





# Pilot Plant NMT-Process – Extension with Biogas Production



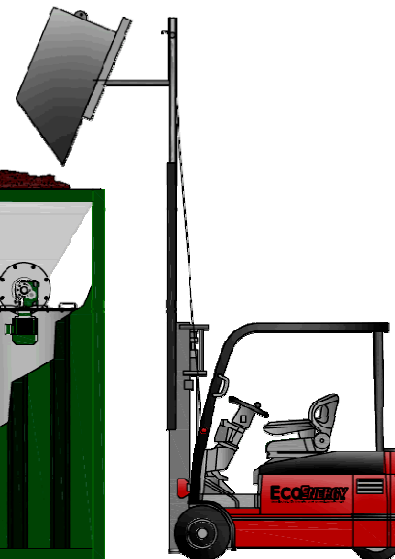
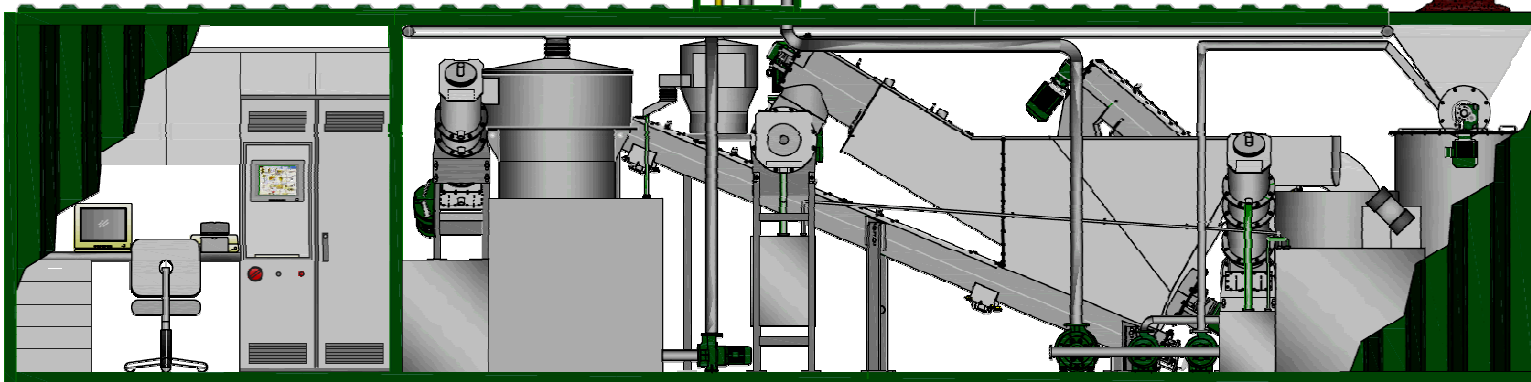
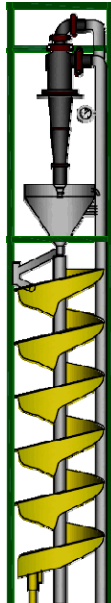
# Pilot Plant NMT-Process – Test Sites



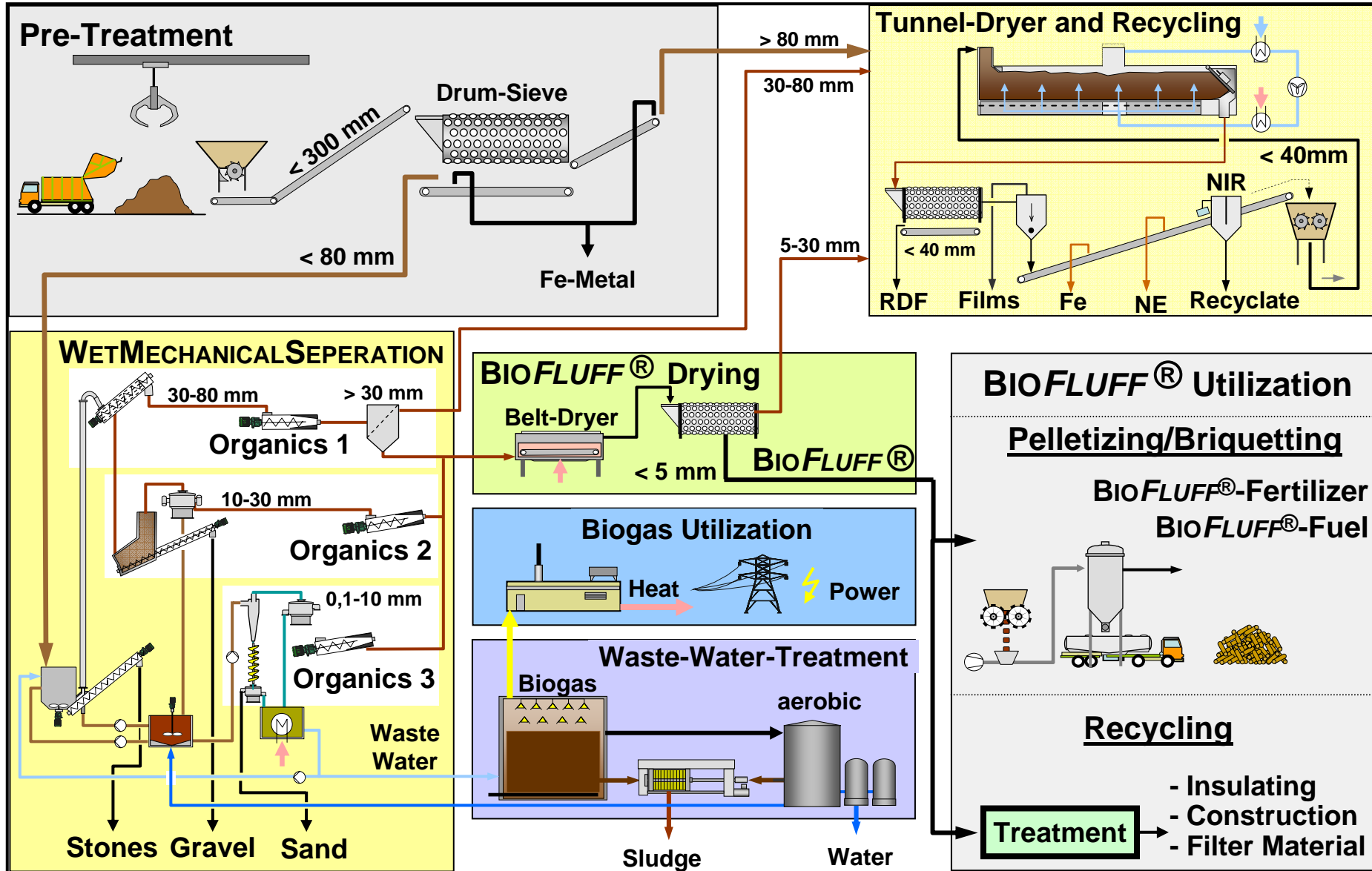
**Test Site Wiefels  
2004**



**Research Center  
Walkenried, 2005 - 2007**



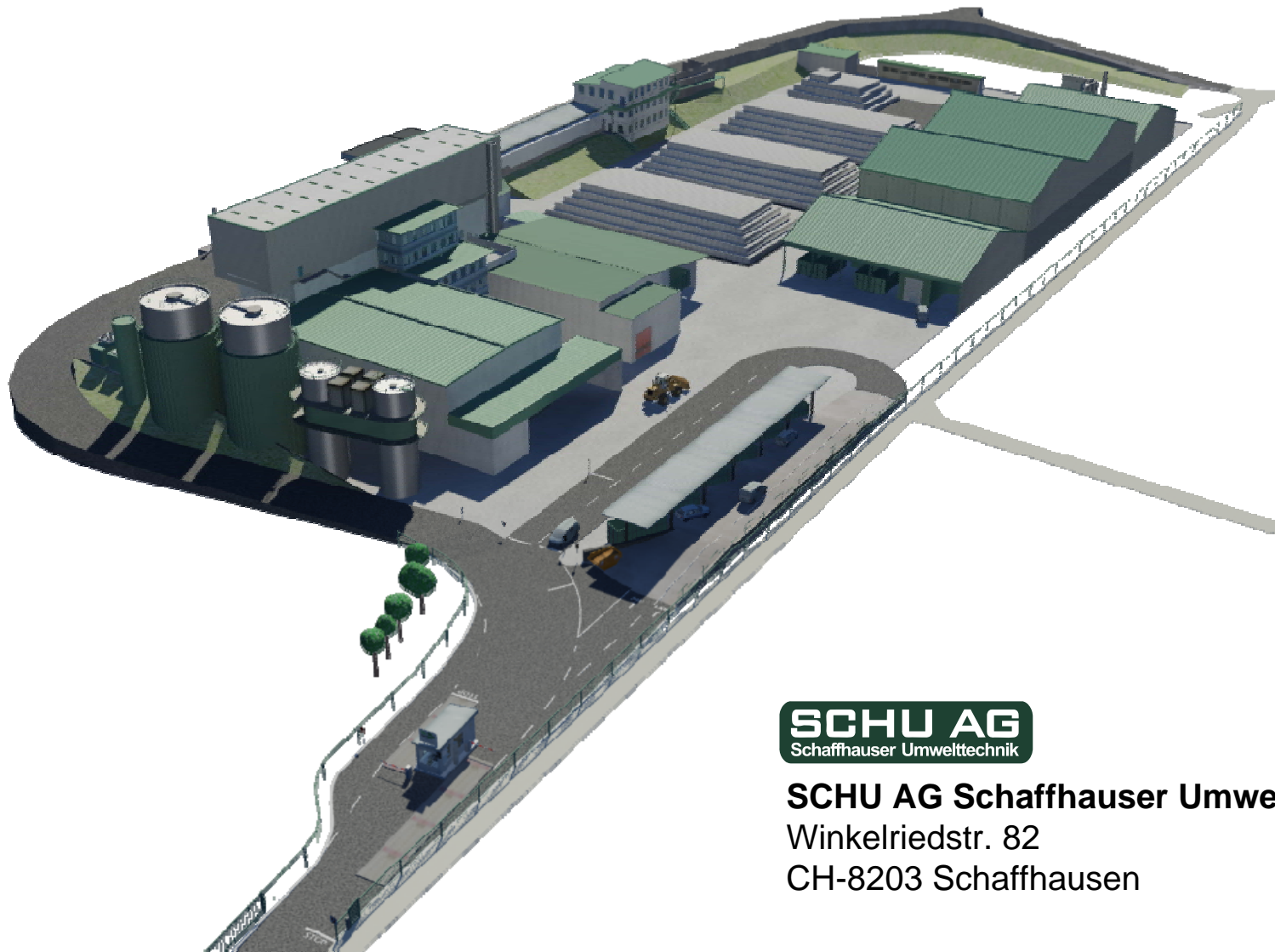
# Vision 2020 – Sustainable Mechanical-Biological-Treatment without Landfill







# KBA Hard - SCHUBIO® - Start up planned 2010



**SCHU AG**  
Schaffhauser Umwelttechnik

**SCHU AG Schaffhauser Umwelttechnik**  
Winkelriedstr. 82  
CH-8203 Schaffhausen



# Results Test Phase SCHUBIO® - in Schaffhausen, CH:

## Quality of separated Products

Minerals	usable outside Landfill (in all European Countries)
Organics Biowaste	BioFluff-Pellets as peat substitute (high quality)
Organics MSW	BioFluff-Briquets as   - coal substitute (high quality) > 40% el. eff. - compost (meeting swiss standards)
Wood	CHP - Biomass incineration Plant > 40% el. eff.
Biogas	CHP - Biogas > 40% el. eff.
Miscellaneous	RDF – CHP Waste to Energy Plant > 40% el. eff.
Metals	Recycling
Plastics	Recyclates
Sludge	Sludge Incineration with Phosphate-Recycling and heavy metal recycling (reality in Switzerland)

**Conclusion: Vision 2020 is getting real – „Yes, we can!“**