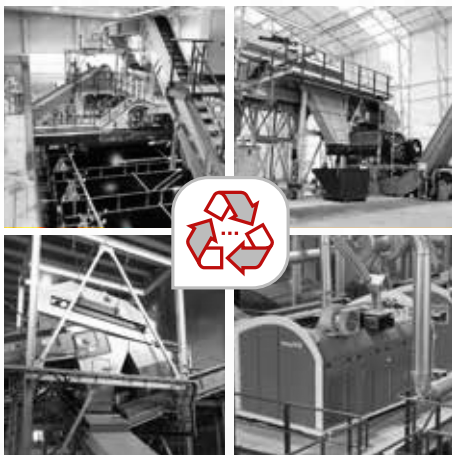




ADVANCED SOLUTIONS FOR WASTE TREATMENT PLANTS

from concept to implementation



RECYCLING



WASTE TO FUEL



TURN INTO GREEN

YOUR PARTNER FOR TURNKEY PLANT SOLUTIONS



REDWAVE WASTE COMPETENCES AND TECHNOLOGIES



Process Consultancy

- Definition of requirements
- Sorting tests
- Feasibility study
- Preliminary planning



Detailed Engineering

- Classification of technical interfaces
- Establishment of mass balance
- Technical specification of plant components
- Process and instrumentation diagram
- Detailed plant engineering
- Supporting services for the plant operator (planning, supervising)



Project Management

- Procurement
- Coordination of all parties involved
- Project scheduling



Manufacturing – Supply of equipment

- Quality assurance
- Factory acceptance tests of third-party supplier deliveries
- Preparation of operation manuals
- Packing and shipment



Installation – Commissioning

- Site coordination
- Mechanical and electrical installation
- Commissioning
- Training of plant personnel
- Plant implementation as general constructor



Customer Service

- Remote access for support
- Service contracts
- Preventive services
- Service hotline

MECHANICAL TREATMENT



RECYCLING

- Max. recovery of tailored RDF for WtE-systems
- Recovery of recyclables:
 - ferrous and non-ferrous metals
 - plastics
 - glass, stones, ceramics
- Reduction of landfill disposal
- REDWAVE in-house sensor based sorting machines

MECHANICAL-BIOLOGICAL TREATMENT



WASTE TO FUEL

- Max. recovery of clean dry SRF & recyclables
- Tailored systems for:
 - coal co-firing
 - advanced WtE-technologies (gasification)
- Minimisation of landfill disposal
- REDWAVE in-house sensor based sorting technology
- REDWAVE biocell technology for biological tunnel drying

IN-VESSEL COMPOSTING / STABILISATION



TURN INTO GREEN

- Aerobisation and composting of digestate
- Source separated organics composting
- Sewage sludge composting
- REDWAVE biocell technology for tunnel composting for sanitisation and stabilization of green waste

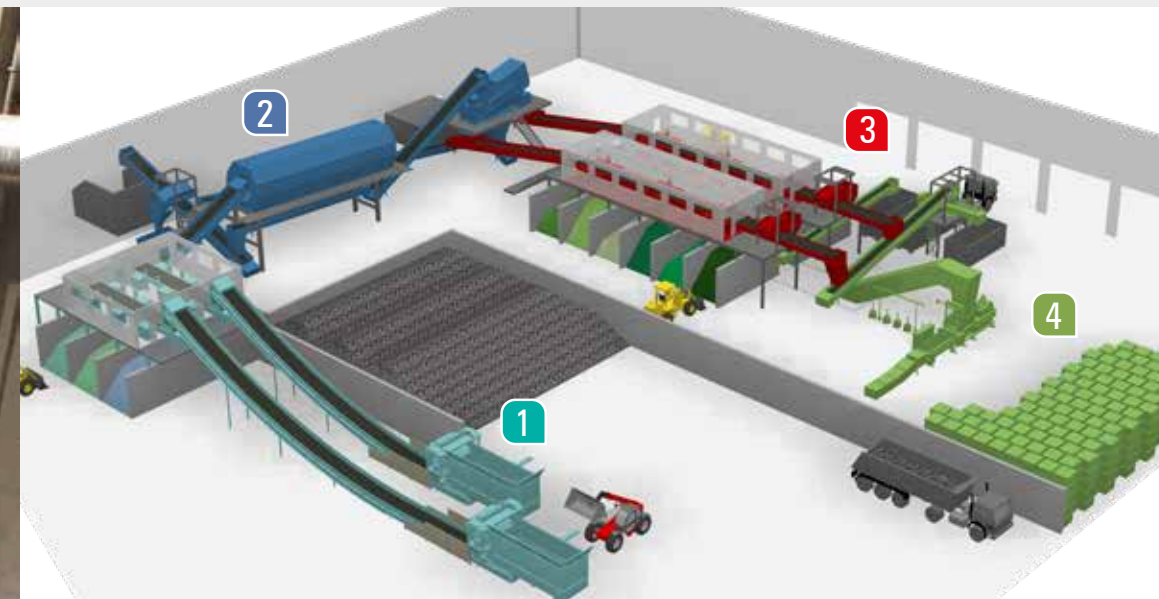


MECHANICAL TREATMENT

FOCUS

- Loosen up and preparation of the feedstock for the downstream sorting
- Separation of recyclables such as metal, paper, cardboard, plastics etc.
- Separation of contaminants such as PVC, aggregates etc.
- Production of RDF/SRF according to the client's specification
- Reduction of the materials to be landfilled

BASIC SOLUTIONS



1 PRE-TREATMENT

Preparation for the downstream process

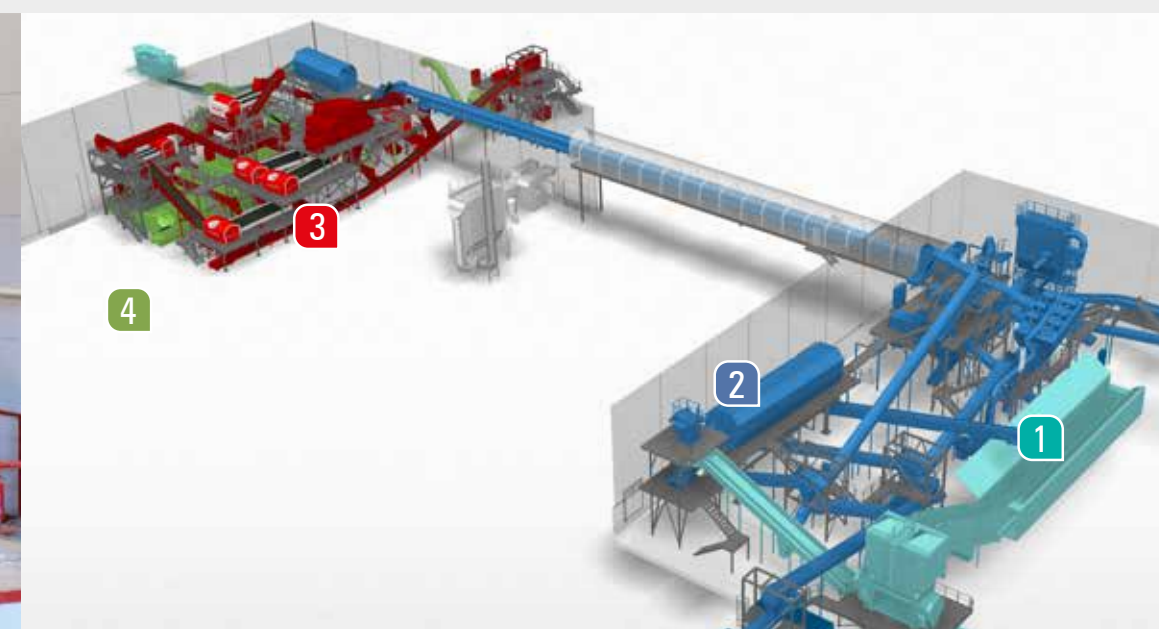
- Shredding
- Ferrous separation
- Pre-sorting

2 MATERIAL CLASSIFICATION

Processing of specific fractions according to their physical properties

- Shredding
- Screening
- Wind shifting

ADVANCED SOLUTIONS



3 SEPARATION

Recovery of recyclables and separation of impurities

- Sensor based sorting
- Ballistic separation
- Magnetic sorting
-

4 PACKAGING / LOADING

Packing and transport

- Loose or compacted
- Baled and wrapped
- Soft pelletised



MECHANICAL BIOLOGICAL STABILIZATION

FOCUS

- Loosen up and preparation of the feedstock for the downstream biodrying and sorting
- Separation of recyclables such as metals, paper, cardboard, plastics etc.
- Biodrying to:
 - improve the sorting efficiency
 - increase the calorific value
 - mass loss due to the reduction of the water content
 - good storage capability because of the biological stabilisation
- Separation of contaminants such as PVC, aggregates etc.
- Production of SRF according to the client's specification
- Reduction of the material to be landfilled

1 PRE-TREATMENT

Preparation for the downstream process

- Shredding
- Ferrous separation
- Pre-sorting

2 BIOLOGICAL DRYING

Reduction of the MSW water content up to <20%

- Increase of the calorific value
- Biological stabilization

3 MATERIAL CLASSIFICATION

Processing of specific fractions according to their physical properties

- Shredding
- Screening
- Windshifting

4 SORTING

Recovery of recyclable materials, separation of non-combustible materials

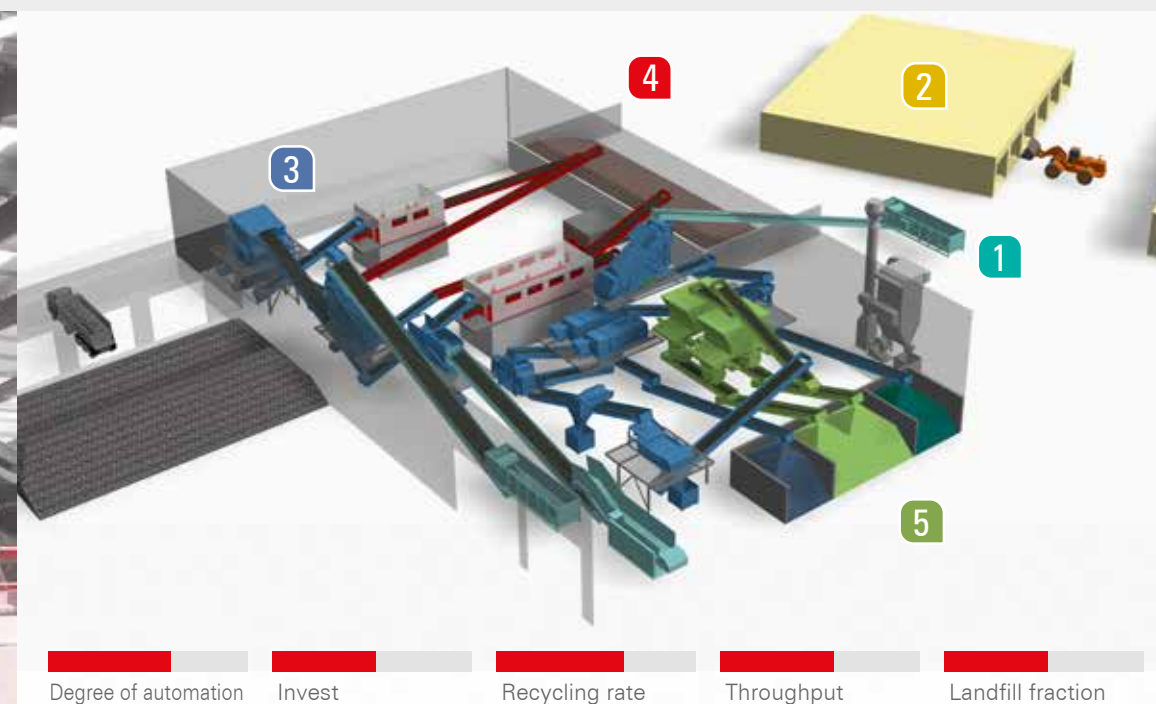
- Sensor-based sorting
- Ballistic separation
- Magnetic separation
- Windshifting, density separation

5 PACKAGING / LOADING

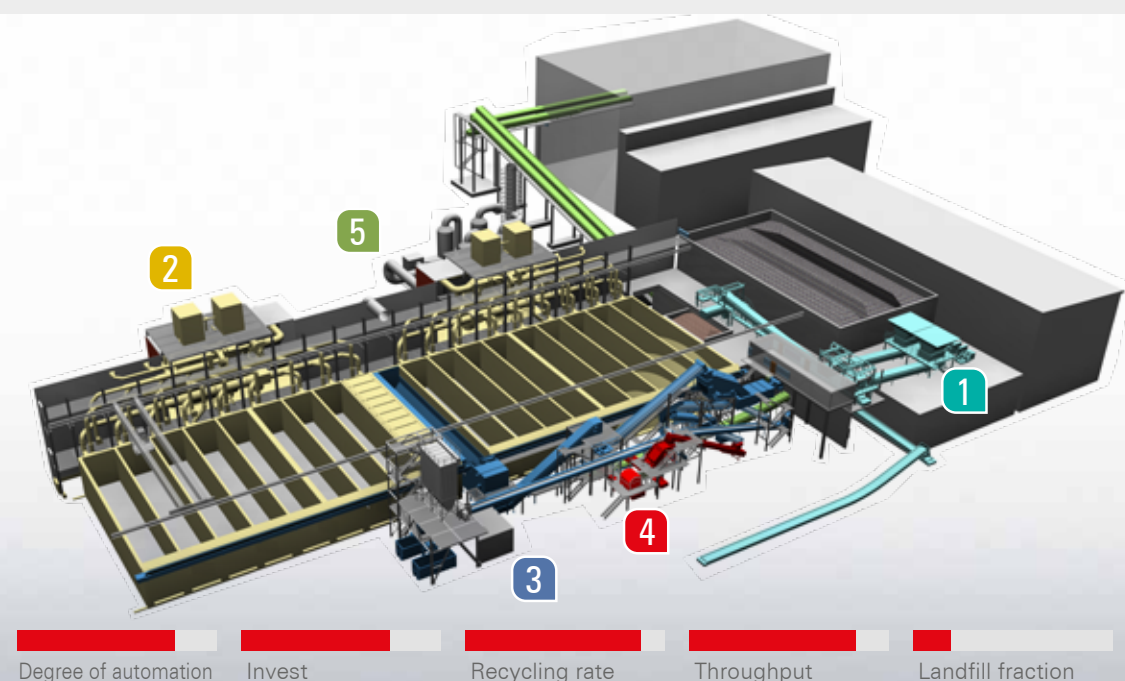
Packing and transport

- Loose or compacted
- Baled and wrapped
- Soft pelletised

BASIC SOLUTIONS



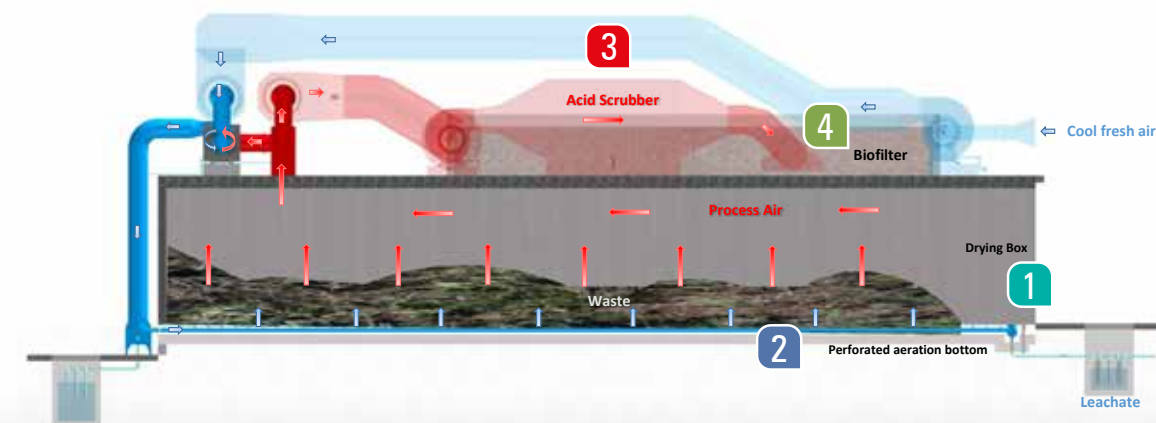
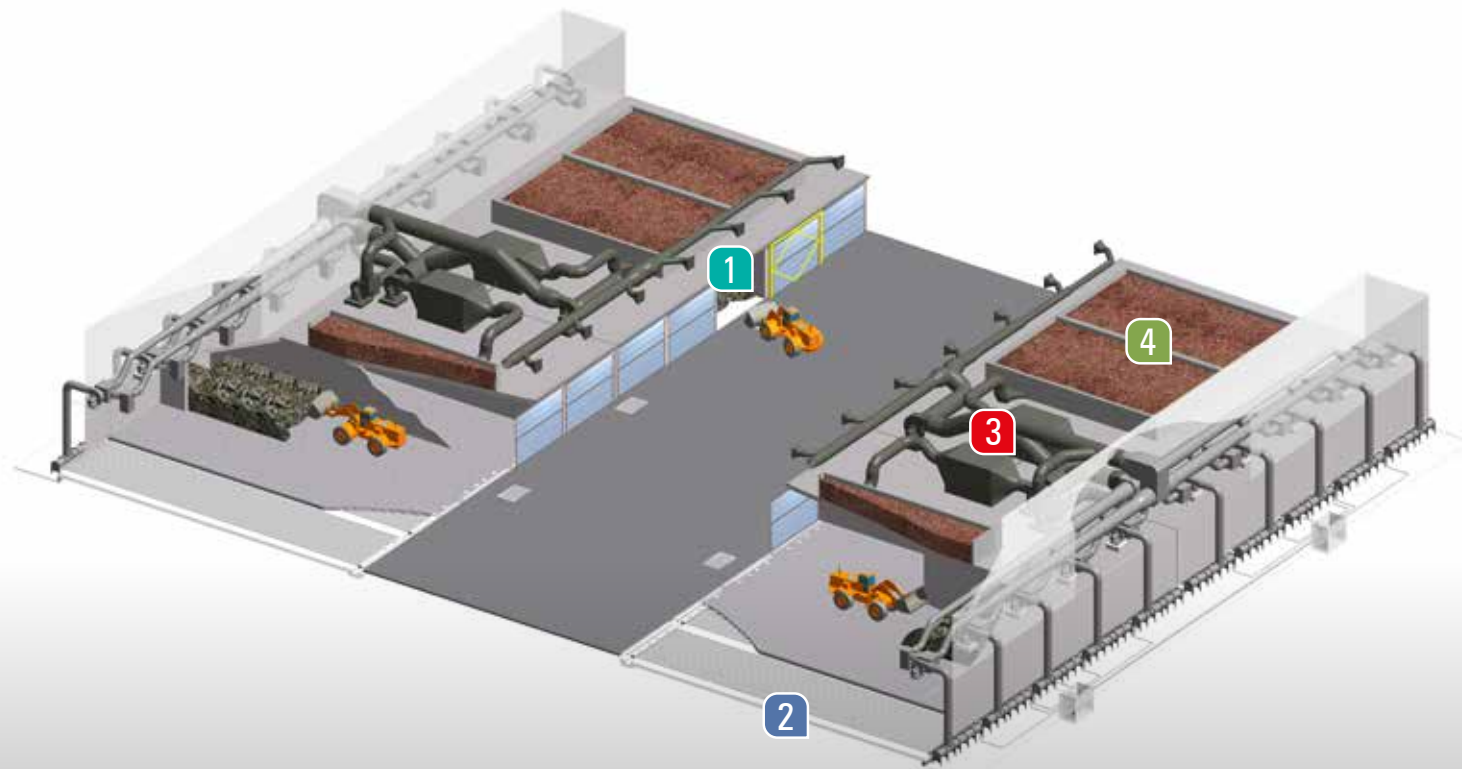
ADVANCED SOLUTIONS





IN-VESSEL COMPOSTING / STABILISATION

DRYING AND COMPOSTING



BIOLOGICAL STABILISATION (DRYING):

Benefits:

- Unlike thermal drying no fossil fuel or external heat is required (low power consumption)
- Landfill diversion rate greater 85% achievable
- Inerts can be used as landfill cover
- Low space requirements due to short retention time of the waste inside the biodrying unit (4-10 days)
- Outgoing products meet industrial requirements (SRF, metals, recyclables)
- SRF is recognised as a quality fuel for thermal processes (coal fired power plants, cement kilns etc.)
- Proven and reliable technology

IN-VESSEL COMPOSTING:

Benefits:

- Optimised microbial environment
- Enhance natural breakdown and speed up composting compared to conventional composting systems
- Reduce organic waste
- Convert the remaining organic waste into compost
- Sanitisation of the feedstock guaranteed
- Enclosed system
- Odour control according to European requirements
- Recycling of condensate

1 BIOCELL DRYING BOX

- Enclosed system
- Monitored system
- Lowest maintenance
- Highly economical

2 AERATION FLOOR

- Forced ventilation by tailor-made aeration floor
- Special arrangement of the nozzles to allow for an optimal ventilation
- Inverter controlled air flow



3 ACID SCRUBBER

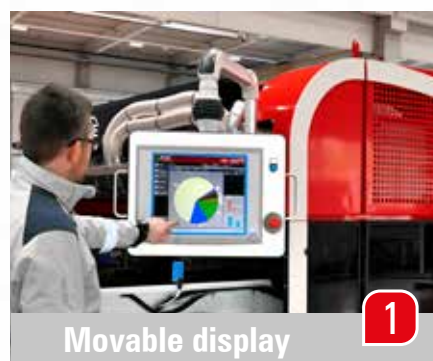
- Fines and ammonia reduction of the exhaust air
- Humidification of the air flow prior to the biofilter
- Low maintenance
- High reliability

4 BIOFILTER

- Completely natural process
- Low maintenance
- Low energy costs
- High reliability
- Long duration of the biofilter media

The new generation of INTELLIGENT[®] sorting

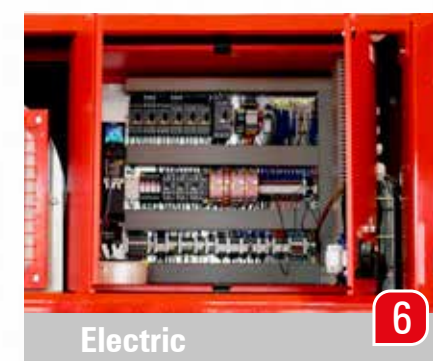
OPTICAL SORTING FOR RECYCLING AND WASTE



Movable display



Illumination



Electric



FOCUS

- Sorting, recovery and quality improvement of recyclables
- Reduction of chlorine content in RDF/SRF
- Enrichment of combustibles



Movable display 1

Illumination 2

Valve box pneumatically movable 3

Rotating divider 4

5 Cooling

6 Electric

Plate for easy maintenance 7

SORTING APPLICATIONS

- **Municipal Solid Waste**
Recovery and sorting of:
 - plastics
 - paper and board
 - combustible materials
 - metal (ferrous/non-ferrous)
 - glass (different material and/or colour)
- **RDF/SRF**
- **Construction and Demolition Waste**
- **Plastics**
Sorting of lightweight packaging:
 - PET (different material and/or colour)
 - HDPE + LDPE
 - PP/PS
 - PVC
- **Paper**
 - cardboard
 - news & pams
 - tetra

GENERAL DATA

- Execution: 2-way-system or 3-way system

REDWAVE SORTERS

- Cutting-edge sorting technology
- Highest reliability and efficiency
- Highest sorting accuracy at high throughputs
- Increased value of the material, increased profit
- Instant online support
- Ready for industry 4.0



BENEFITS OF THE NEW REDWAVE NIR

- **Simple and short-term implementation on site**
 - Place – connect – start
 - All-in-one black box design
 - no wiring on surface
 - flat design
- **Electrical improvements**
 - Lower energy consumption
 - Improved energy saving light system
 - New designed temperature management
- **Improved maintainability**
 - Floor flap for activities inside
 - Easy access, maintenance-friendly
 - Pneumatical swiveling of valvebox
 - Enhanced belt exchange
 - Flexible interface
- **Maximal flexibility**
 - Easy upgrade from 2-way to 3-way system
 - Sensor fusion (NIR/RGB/METAL)



Locations



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