

Shaping the future

Innovations in recycling technology
are the result of our major commitment
to a sustainable economy.

Eggersmann
Plant Construction

The recycling of valuable raw materials and the extraction of alternative energy from organic waste are Eggersmann Plant Construction's contribution to the conservation of natural resources.



Eggersmann
Anlagenbau



Karlgünter Eggersmann,
manager

The realisation that natural resources are finite has pushed people into thinking about their lifestyle. This is why we are now more attuned to the idea of nature being a valuable asset that needs to be safeguarded for future generations. The development of sustainable solutions is the active way to contribute to a future worth living, and is something that our employees engage in on a day-to-day basis.



Technology on a human scale

There is great demand for innovative solutions in the recycling-technology sector. We develop and provide such individual solutions, from our headquarters in Germany, for use all over the world.



Mechanical aspects

Mechanical systems play an important part in ensuring the efficient recovery of valuable materials from mixed waste. High-value raw materials are recovered by sorting, cleaning and other processes in order to make them suitable for reuse and industrial production.

Biological aspects

Organic waste is both an ideal source of valuable energy and a raw material for use in the manufacture of nutrient-rich humus and fertilisers. Unique solutions developed by us in-house explore whole new ways of using organic substances, and show just how effective the organic treatment of suitable waste can be.

Eggersmann Plant Construction offers innovative system concepts based on both mechanical and organic recycling techniques. As a member of the Eggersmann Group of Companies, we offer a full range of comprehensive solutions.

Mechanical processing

Recovery of recyclable waste

Batches of mixed waste often contain valuable substances. Our mechanical processes make them suitable for reuse.

Mixed or pre-sorted industrial and commercial waste contains raw materials that can be recovered by means of mechanical processing. Mechanical recycling equipment supplied by Eggersmann separates recyclable waste by composition and particle size to deliver the recovered raw materials in a particularly effective and efficient way, in accordance with application and material requirements.

The size of each plant system is based on a detailed analysis of the substances being handled and the required quantities of recycled raw material. High-performance components developed by us in house guarantee maximum purity, reliability and fine-tuned capacity as required. The entire design and setup procedure is placed in the expert hands of our highly-qualified, multi-disciplinary team.



Maximum quality for optimum processing

We have developed our own innovative solutions for the seamless optimisation of each processing stage to the individual situation and application, and in order to ensure top quality.

The process

The mechanical processing procedures are always adapted according to the raw materials and the required purity grade of the resultant products:

- Pre-sorting
- Breaking-down
- Multi-stage sieving
- Magnetic, optical and gravimetric separation by substance type
- Sorting by hand
- Further breaking-down
- Loading (loose and compressed)

RECYCLABLE WASTE	metals
	non-metallic material (aluminium)
	paper and cardboard
	mixed plastic
	pre-sorted PE/PET
	substitute fuels
	glass / inert materials
	wood
organic waste	





Lightweight packaging

Lightweight packaging poses special challenges for our mechanical sorting and recyclable material recovery systems, especially when they are called on to handle containers made of composite materials. A modern system installed by us in Braunschweig (Germany) sets new benchmarks where the range of recyclable substances suitable for efficient recovery is concerned:

- Tin cans
- Foil materials (in two size fractions)
- Large hollow items and hard plastic containers
- Liquid cartons
- Non-ferrous metals
- Paper, cardboard, cartons
- Hard and soft mixed plastics: PE, PP, PS, PET (may be separated by colour as an option)



Mechanical processing

The conservation of resources is also economically efficient. State-of-the-art recycling systems from Eggersmann Plant Construction put into practice all the potential of mechanical processing.

Paper, cardboard, cartons

Separately-bundled batches of paper, cardboard and cartons are a good potential source of secondary materials. The Alba company of Berlin (Germany) has been separating these valuable materials into recyclable batches since July 2006. With an annual capacity of 80,000 Mg, this state-of-the-art plant is designed to meet the requirements.

Mixed domestic waste

The wide variety of domestic waste handled by the Spanish municipality of León has posed a major challenge to the processing capacity of the mechanical sorting system which was supplied by us in the autumn of 2003.

With a rated capacity of 50 Mg/h, the system extracts a total of 220,000 Mg of recyclable waste every year, and sends organic waste on for further processing. This mechanical sorting and organic recycling system allows the City of León to fulfil its obligations under the terms of the corresponding environmental law, and provides a lasting contribution to the ecology of the zone.



Organic processing

Utilising natural potential

Nature shows us the potential that lies in the processing of recyclable organic materials. We make them suitable for reuse in a range of applications.

The natural fermentation-based recycling of organic waste provides us with a potentially inexhaustible source of energy. The fermentation of organic waste releases energy-rich methane gas, the high quality and economic efficiency of which makes it a viable alternative to fossil fuels.

In addition to the recovery of biogas, Eggersmann recycling systems also provide nutrient-rich compost for use in the gardening and agricultural sectors.

Modular concepts, modern ways of optimising efficiency and flexible applications are all characteristic of the solutions supplied by Eggersmann Plant Construction.

Sustainable energy recovery

Active conservation of resources

Innovative technologies

Maximum effectiveness

Cost-efficient operation

Flexible range of applications

Innovative processes and the robust construction of our tunnel composting system to the highest industrial and safety standards increase the efficiency of our KOMPOFERM biogas recovery method.

At the heart of every Eggersmann Plant Construction biogas plant are specifically designed and developed tunnels. In these tunnels the fermentation process of the raw material is accelerated by continuously saturating it with a process liquid. After a very short period of time, the cleverly designed circulation process, operating between the dry fermentor and the percolation accumulator, results in a powerful methane biology which ensures that the fermentation process is kept running. This ensures an optimal, continuous output of high quality biogas with minimal waste water. The robust construction of the tunnel, together with the ease of filling, using conventional front-loaders, reduces maintenance and running costs.

The KOMPOFERM process

Eggersmann Plant Construction has developed its own extra-efficient method of recovering biogas from organic waste which, in comparison to conventional procedures, offers lower investment costs, less expenditure on maintenance and consistently high levels of gas production. Eggersmann Plant Construction can also modify or extend existing plant systems to allow the integration of high-performance biogas technology.



Organic processing

Recycling equipment supplied by Eggersmann Plant Construction can be installed either as an extension designed to increase the potential of an existing plant or as a free-standing system in its own right for the processing of organic waste.

Modernisation of the Nieheim composting plant

The composting plant at Nieheim (Germany) has been handling 75,000 metric tons of organic waste every year since 2003. The plant is renowned for the good quality of its output and high efficiency of its operation. As part of a comprehensive programme of modernisation, the plant was extended to include a further 13 intensive rotting tunnels. With automatic filling and extraction, mutually-compatible key components for the breaking-down,

sieving, sorting and conveying of material, and the integration of a modern process control system, this plant sets new standards in recycling technology. The highly-efficient KOMPOFERM dry fermentation process and waste-water-free operation show how well cost-effective running and high standards of environmental sustainability can be combined.

Pohlsche Heide

The 16 tunnels of this intensive composting system with additional partial-flow fermentation at the Pohlsche Heide recycling plant in Minden (Germany) went successfully into operation in 2005. This turnkey system was designed to allow the addition of a further seven tunnels to increase capacity. The plant handles up to 120,000 Mg of household waste every year, with 60,000 Mg of biomass going annually to the tunnel composting system. Eggersmann Plant Construction carried out all the installation and setup work, in addition to the corresponding structural planning and completion tasks, for this truly state-of-the-art processing plant.



Ennigerloh

With 32 tunnel units for the intensive rotting and post-rotting process, plus a line composting system in section II, the mechanical treatment system used in the production of secondary fuels at the Ennigerloh (Germany) waste-disposal plant has taken organic recovery processes to a new level. In accordance with article 30 of the corresponding German environmental legislation (BImSchV), this ultra-modern plant had to include a material stabilisation system and the production of reusable organic material in order to comply with the relevant regu-

lations covering waste disposal (AbfAbIV). The various parts of the tunnel composting system, all of which are designed to run smoothly with each other, are integrated into an automated process-monitoring and control system. This permits fully-automatic control of the inputs and outputs of the tunnel. The range of available systems includes exhaust-air treatment by means of bio-filters and regenerative thermal oxidation RTO, along with complete water management. The plant system, with its related buildings and external infrastructure, went into operation in 2005.





End-to-end efficiency

Right from the planning phase onwards, we draw up detailed material-flow diagrams based on material analyses and precisely-calculated input quantities for the design of mechanical and organic processing systems. These diagrams are then used to determine the dimensions of the plant systems. Even at this early stage in the process, the wide-ranging know-how and skill of our engineers in the field of recycling is combined with specialist knowledge of biology and materials science in order to develop suitable solutions. The full range of multi-disciplinary skills offered by our team of experts can also be applied to the design of individual systems.

As a member of the Eggersmann Group, we design and build recycling plants, along with their corresponding auxiliary buildings and entire sets of infrastructure, covering everything from initial planning to final handover.

AREAS COVERED	Machine technology
	Construction and plant setup
	Process engineering
	Onsite logistics
	Safety technology
	Electrical engineering, process automation and display systems



The whole spectrum

Eggersmann Plant Construction is characterised by its wide range of services which are the basis for complete solutions.

Documentation

A comprehensive set of documents is drawn up especially and supplied with each turn-key recycling plant:

- Setup plans, design drawings and cross-sectional views
- Operation instructions and a troubleshooting guide
- Lists of parts requiring lubrication, maintenance instructions and servicing schedules
- Technical data sheets and lists of spare parts
- Programming documentation



Maximum safety and reliability for your project

As chief contractor, Eggersmann Plant Construction is responsible – in both public and commercial projects – for all work involved in the planning and construction of recycling plants. Our effective deployment and smooth integration of professionals from all disciplines means that we can guarantee high levels of reliability at all stages of the project. Recycling plants supplied by Eggersmann

are thus particularly well-integrated in terms of infrastructure design and control and regulating systems. In order to ensure a smooth handover, our experts remain onsite until the system is up and running in normal operation. And Eggersmann Plant Construction's competent service providers are on hand to perform subsequent system maintenance when needed.

Preserving the tried and tested while encouraging development

Opening-up the future using tradition

Whilst conscious of traditional values, we have developed the openness and courage to look to the future. Today, this philosophy characterises the identity of a complete company group.

The Eggersmann Group characterizes the association of independent companies which are committed to the building and architecture segments and to the development and realisation of new environmental technologies for an international customer base.

The Eggersmann group is a structure which has grown continuously over the past 50 years. Traditional values and tried and tested solutions continue to be the basis for the work our specialists do when developing new, unique solutions.

With us, even large projects and new solutions are created on a personal level. Direct contact, frankness in discussion and established partnerships are typical of our work. Existing and potential customers enter into a relationship with us. We would like to know your wishes and needs concerning the project, support your business and, by doing everything in our power, create exactly what you want. In short: to be a faithful partner.



The Eggersmann Group

The commitment of an entire generation has given rise to a group of companies that is well up to providing the architectural, construction and environmental-technology services that an exacting international clientele demands.

Synergy and independence

Cooperation between organisations is a decisive factor where shared success and the competitive advantage of our clients are concerned. As a provider of all-round solutions, we make full use of the valuable synergy that arises from such close cooperation between our members.

All members of the Eggersmann Group of Companies have to date functioned as freestanding businesses. For the customer, this translates into maximum investment security and reliability, for both large-scale and individual projects. It also lets us accurately gauge the performance of each individual part of the group.





Head Office

Max-Planck-Straße 15
33428 Marienfeld
Fon: +49 (0)5247 9808-0
Fax: +49 (0)5247 9808-40

Branch

Carl-Zeiss-Straße 8
32549 Bad Oeynhausen
Fon: +49 (0)5734 6690-0
Fax: +49 (0)5734 6690-140

Branch

Diezmann-Straße 67
04207 Leipzig
Fon: +49 (0)341 600775-0
Fax: +49 (0)341 600775-20

Internet

www.f-e.de
info@f-e.de