

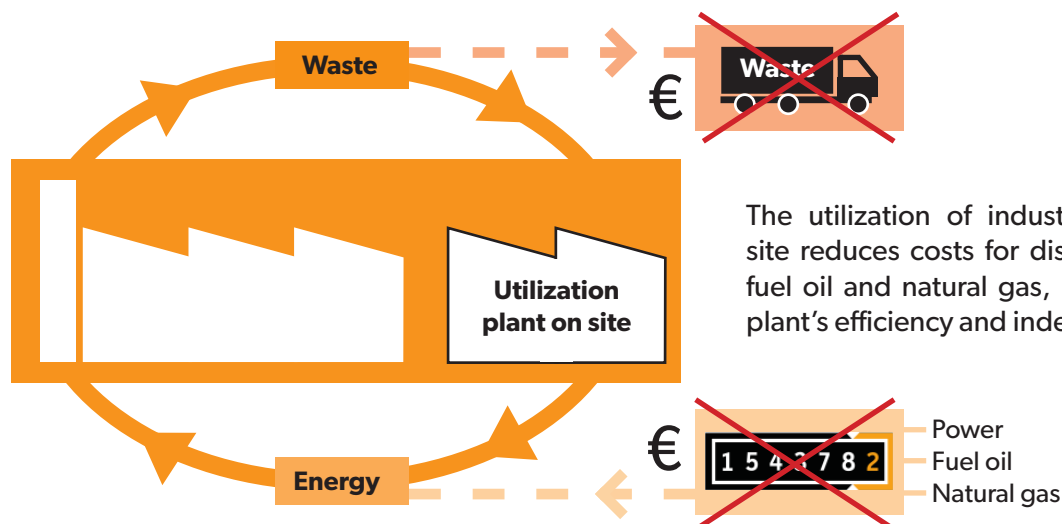
Compact small-sized plants for the utilization of industrial waste

The disposal of industrial waste and production residues is a considerable cost factor for many companies. Furthermore, the waste is disposed of by trucks, and is having an impact on the company's carbon footprint. In the same time, many factories also consume large amounts of power, fuel oil and natural gas to generate heat and steam for the production process.

Thermal or biological utilization of waste can be of use here and increase the company's economic efficiency.

WEHRLE plants are compact and have a small footprint. The individual plant design takes into account specific requirements and the existing site conditions. Due to their high flexibility, WEHRLE plants can also treat waste from nearby companies, being thus an additional source of revenue.

The optional generation of energy and a modern exhaust air system ensure a constant environmental friendliness. Depending on the plant size, WEHRLE may supply the entire plant and, if requested, take care of the plant operation.



Utilization of industrial waste

Thermal utilization	Biological utilization
Waste with calorific value, e. g. <ul style="list-style-type: none"> ▶ production residues / industrial waste ▶ Contaminated waste wood ▶ Screen overflows ▶ Solvents (in case of auxiliary firing) ▶ RDF 	Waste with high organic content, e.g. <ul style="list-style-type: none"> ▶ Food waste ▶ Pomace ▶ Sludge containing oil and grease ▶ Pharmaceutical waste with toxic components
generates heat, process steam, electric power, cold, compressed air	generates biogas, heat, electric power or gas to be fed into the power supply system
Residues: cleaned flue gas and inert ashes	Residues: digestate to be disposed of

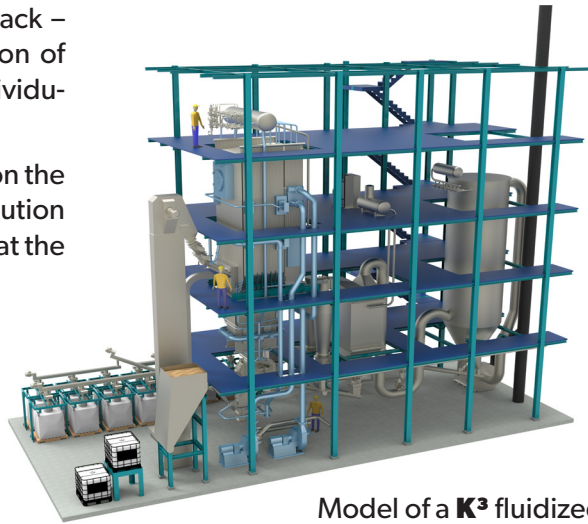
Thermal utilization of industrial waste with *K³*-industry

Small, compact, complete – Stationary fluidized bed technology for industries

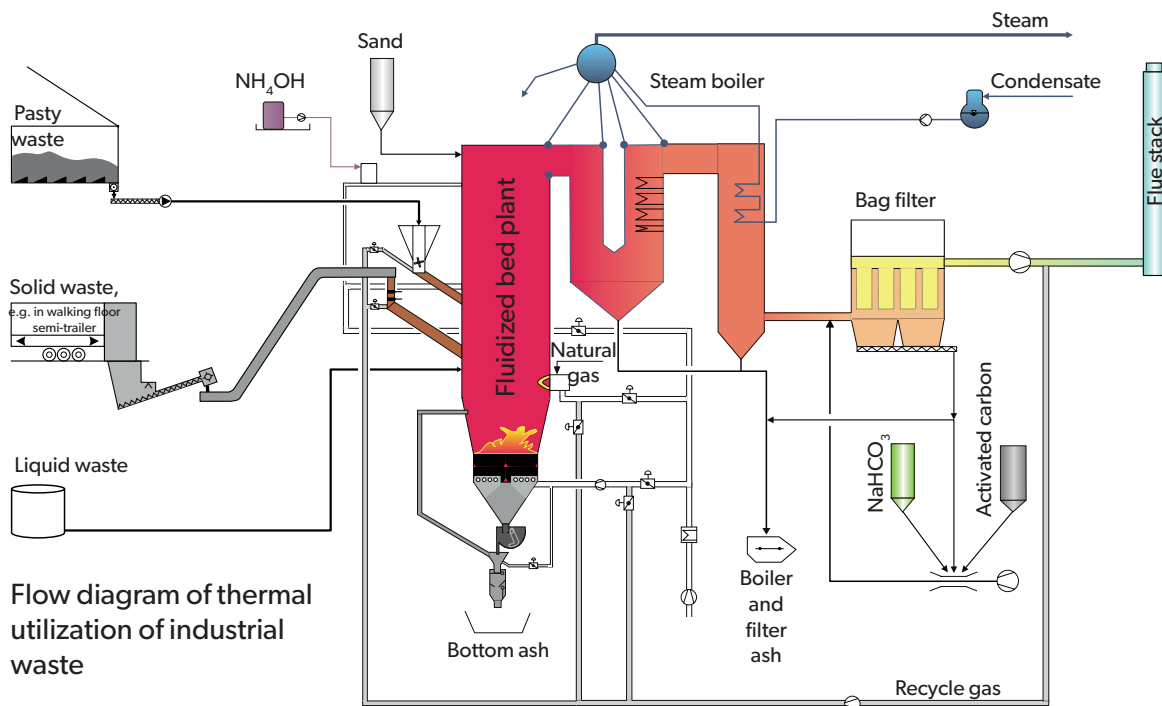
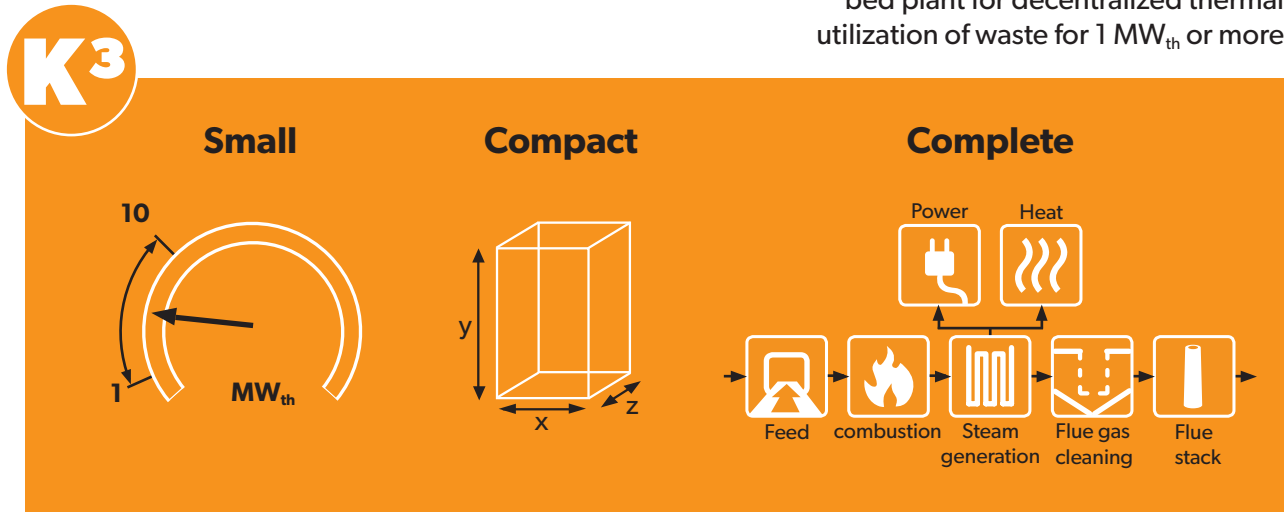
Turnkey and tailor-made solutions from feed to flue stack – with customized energy applications for the generation of power, heat, process steam or cold combined with individual services from one source.

The compact plants have a small footprint (depending on the plant size from 130 m² upwards) and are the ideal solution for decentralized thermal utilization of waste, ensuring at the same time the supply of energy.

The sophisticated process control is very user-friendly and allows an outsourcing of the operation. The company can thus focus on its main processes. Depending on the dimensioning, additional waste from external sources can be treated to increase efficiency.



Model of a **K³** fluidized bed plant for decentralized thermal utilization of waste for 1 MW_{th} or more



Flow diagram of thermal utilization of industrial waste

Reference VILLAS Austria GmbH

Fluidized bed technology for thermal utilization of production residues

Stationary fluidized bed plant with excess heat boiler for further utilization of heat as base load in the production process.

The plant distinguishes itself by:

- ▶ its extremely high fuel flexibility
- ▶ its bag filter with two-stage washer
→ few emissions, significantly below limit values
- ▶ its high availability > 8,000 h/a

Fuels:

- ▶ Waste from asphalt production
- ▶ Sewage sludge
- ▶ Fractions from plastic shredding machines
- ▶ Waste wood / pallets

Total rated thermal input	2.8 MW _{th}
Flue gas cleaning process	Dry sorption
Commissioning	2006
New performance	4.3 MW _{th}
Extended flue gas cleaning	Flue gas washer
Commissioning	2012



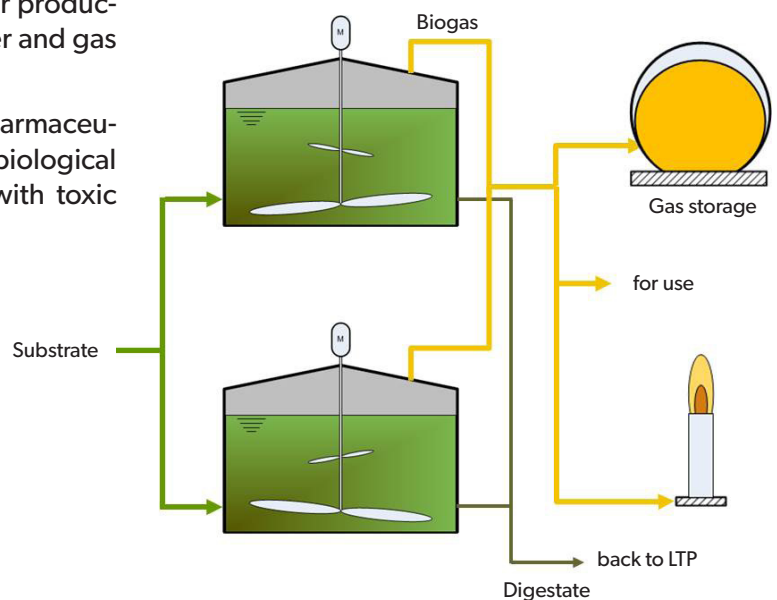
BIODIGEST® for the biological utilization of organic waste

Anaerobic digestion technology for biogas production

In case of waste and sludge with high organic content, it is often possible to generate biogas by using an anaerobic biological treatment system. This method can also be used for wastewater with high concentrations of solids or even for toxic substances. The production of biogas permits the generation of power and heat to be used for production processes or to be fed into the power and gas supply system.

For example, the production site of a pharmaceutical group in Irvine/GB – mechanical-biological treatment of wastewater rich in solids with toxic

substances utilizing the BIODIGEST® process. In this project, WEHRLE also provided a vast service package including analysis of materials, Water Mapping and side-stream treatment in order to reduce the operation costs of the existing plant.



Service: Partnership and support beyond take-over

Highest availability, long plant lifetime and safe operation

From technical consulting to installation based on your requirements, WEHRLE's service team will support you with its experience and reliability.

Due to the close connection with WEHRLE's manufacturing division, the delivery periods of spare parts and consequently the downtimes are particularly short. We offer an entire range of services, from planning to project management, transport, assembly and commissioning – everything from one source carried out by WEHRLE's experts!

Range of services:

- ▶ Plant revision and maintenance
- ▶ Restructuring
- ▶ Optimization
- ▶ Repair / Replacement of components
- ▶ Installation and commissioning
- ▶ Plant operation

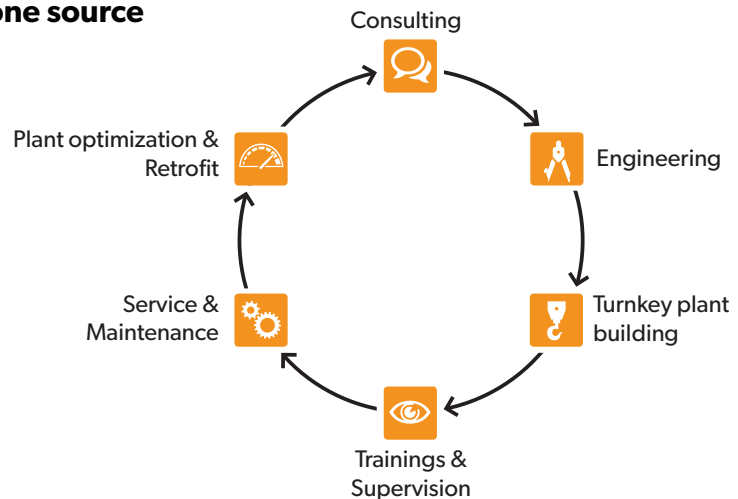


WEHRLE-WERK AG

Plant engineering and services from one source

With over 150 years of experience in the field of plant and boiler construction, WEHRLE is a synonym for quality and longevity for energy technology. WEHRLE's high-performance boilers set benchmarks in difficult applications, e.g. for the incineration of hazardous waste.

Especially industrial companies profit from the unique advantages of WEHRLE's technology: the economic disposal of waste and the reduction of natural gas consumption on site guarantee higher economic efficiency.



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Company video