






Profile of the Hese Umwelt GmbH

The Hese Umwelt GmbH is a company within the Hese Group. The parent company Maschinenfabrik Ernst Hese GmbH is an independent mid-scale enterprise with a tradition of about 100 years as plant manufacturer for material handling systems.

The following companies are affiliated to the Maschinenfabrik Ernst Hese GmbH as 100% subsidiaries of the Hese Group:

 STELLER	Pulleys for bulk- and unit load material conveyors
 HMS	Installation and Steel Structure
 HESE UMWELT	Environmental Technology
 MINITEC <small>ENGINEERING</small>	Used oil recycling and hydrogen production
 A3	Wastewater treatment and landfill reclamation

The area of responsibility of the Hese Umwelt GmbH is the installation of turnkey plants in the environmental technology field such as biogas plants, composting systems and systems to process secondary raw materials.

Biogas installation

The conception of the Hese biogas installation is focused on the organic waste to be treated. Installations and procedures to process the following waste material have been developed and realized:

- **Biological waste:** a mixture of kitchen scraps and garden waste (such as mown grass, garden weeds and hedge cuttings). Biological waste can also possibly contain a relatively large quantity of wood cuttings.
- **Food scraps and leftovers:** Food leftovers from industry, gastronomy and the food industry.
- **Agricultural materials:** Liquid manure and coenzymes arising from agricultural productions from the breeding or dairy industry from cattle/cows, pigs and poultry. These can be mixed with straw or hay, so that different consistencies of waste have to be expected.
- **Additional organic materials:** here, for example, available volume in digestion tanks on local sewage clarification plants is used to jointly treat mud and existing food scraps.

For all processes biogas is produced, which is made up of approximately 65 % methane and 35 % carbon dioxide. The yield of methane is dependent on the composition of the starting material. The biogas is utilized in a cogeneration plant and is used in the form of gained thermal and electrical energy.

Agricultural biogas plants (single stage) for the digestion of manure and other organic additives are designed to be highly efficient and stable. Pre-pasteurisation modules and heat recovery stand for hygienic, energy saving and economic treatment.

When processing municipal biological waste the Hese Umwelt GmbH support the two-stage IMC-Process, the integrated methanisation and composting process. The IMC-process is a combined aerobic/anaerobic process, which as opposed to conventional process uses an aerobic hydrolysis instead of an anaerobic hydrolysis.

Processing Systems for Secondary Raw Materials:

The wide spectrum of secondary raw materials, such as waste from built-up areas, industry and production waste, fractions when dismantling electric and electronic scrap or from car processing companies – requires a system concept which is suitable for the type of problem.

Based on its own experiences in the processing of mechanical and biologic waste (MBA), the Hese Umwelt GmbH together with its partners offers a modular system to treat waste from built-up areas, waste similar to domestic waste and bulky refuse. This system is known as the modular Hese MBA Process. The modularity allows existing treatment capacities and the different ways to process or dispose of the products produced, to be incorporated flexibly into the process concept.

The Hese Umwelt GmbH offers the following services as a general contractor for the total range of the above-mentioned types of systems:

- Consulting,
- Conception,
- Calculation,
- Approvals planning,
- Project control,
- Construction and installation,
- Structural and civil engineering,
- Testing,
- Commissioning

and maintenance, service and overhaul of the systems delivered by them.

Generally the Hese Umwelt GmbH is in the position and indeed strives to carry out the installations mainly in-house within the Hese Group. The use of subcontractors is if necessary dependent on the specification of the installations and the work load of the company group.

We have trade and cooperation contracts with fixed partners for our international business. The Hese Umwelt GmbH uses, as far as possible, the existing production capacities on site.

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