

BHU

Umwelttechnik

Environmental Technology – Water & Sludge



Water is the future. We produce water.

Increasing water scarcity in the world calls for sustainable solutions in the face of drought, population growth and outdated infrastructure. BHU Umwelttechnik GmbH offers state-of-the-art technologies, processes and systems for water treatment, wastewater and sludge treatment.

BHU Umwelttechnik GmbH covers the entire spectrum of processes and technologies for water and sludge treatment for municipal and industrial applications - for new plants as well as for upgrading existing establishments. Our know-how makes us a reliable partner who supports you in all phases of the project, from the planning through to the ready-to-operate plant.

This brochure provides an overview of our range of services and our core competencies in the areas of process engineering and project management for water technology plants.

Our engineers specialize in the physical, chemical, biological and thermal aspects of water technology processes, providing you with the best possible solution for your job. We determine the optimal treatment stages and integrate them into a holistic, technically and economically optimal plant. The know-how and many years of experience of our employees enables us to process all types of water resources and to produce the desired water quality. Our in-house technology spectrum offers the necessary prerequisites for this.

WATER
TREATMENT

WASTEWATER
TREATMENT

SLUDGE
TREATMENT

INDUSTRY

MUNICIPALITY

We are certified according to
ISO 9001: 2015 (process-oriented)
ISO 14001
OHSAS 18001

Our services for you

Feasibility studies Concept development Offer

Individual projecting
Advanced process design
Technical and commercial offer
Cost calculation

Plant and process design
Plant layout
Space management
Piping and instrument schemes
Detailed design
Electric measuring, control and
process control technology

Facility design

Services at the installation site

Job site assembly or installation supervision
Commissioning and performance test
Operation guidance

Project management and time scheduling
Procurement of equipment and logistics
Quality assurance
Cost control

Project management

Commercial service

Financing
Guarantees
Insurance framework
Cost tracking

Our range of services

Drinking water treatment

Providing the highest quality of drinking water – free of suspended solids, germ-free, colorless and odorless. For all raw water qualities (well water, surface water, salty waters).

River water treatment
Softening and demineralization

Process water provision

Industrial wastewater treatment

Multi-stage wastewater treatment especially for petro-chemical industry, steel industry, paper & pulp production, food industry | Water recovery from process water and purified wastewater | Complete closed waste water circulation (zero-liquid discharge)

Chemical-physical pre-treatment
Biological phosphorus removal
Nitrification and denitrification, classic
and as multi-stage biofiltration

Sand and activated carbon filtration (4th purification stage)

Municipal wastewater treatment

Sludge treatment

Post-treatment of any sludge

New: biological thermal combination process for sewage sludge for optimized energy recovery, recycling and complete waste prevention through the production of fertilizer bases

Cooling tower water treatment
Boiler feed water
Condensate Polishing
Wastewater treatment (for coal power plants)

Power Stations



LHPS

Precipitation, flocculation, sedimentation, clarification and sludge thickening in a compact structure

- High process stability also at changing raw water conditions
- High outlet quality
- High sludge concentration (integrated thickener)
- Minimal space requirement (< 35 % compared to conventional solutions)



BAF - Biofiltration

Biology and sludge retention in a compact structure

- High biological performance
- Fully automatic operation with load-dependent backwashing
- Modular multi-stage structure for carbon removal, nitrification and pre- and post-denitrification
- Space requirement < 50 % compared to conventional systems
- Full enclosure possible

Sand filtration

Single-media or multi-media filtration to remove particles and suspended matter

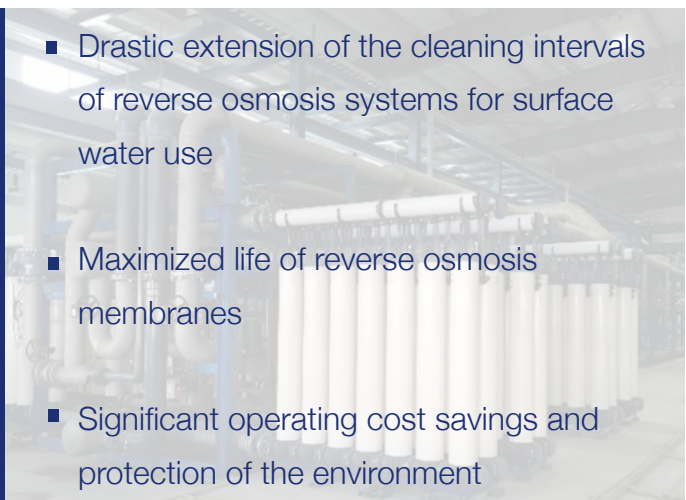
- Excellent solids retention with high absorption capacity
- Fully automatic operation with load-dependent backwashing
- Modular design with a small footprint
- Biologically activatable (biopolishing)
- Full enclosure possible



BiosS-Treat®

Patent protected process /
Biologically activated media
filtration and biostatics dosing |
TOC removing precursor for
reverse osmosis | Prevention of
biofouling

- Drastic extension of the cleaning intervals of reverse osmosis systems for surface water use
- Maximized life of reverse osmosis membranes
- Significant operating cost savings and protection of the environment





StR-Process

The complete solution for sewage sludge disposal

Sludge to Resource

Future-oriented sewage sludge treatment process as a combination of biological and thermal process steps.

Maximum power generation by means of biogas power generation with balanced thermal energy balance | Much higher current efficiency compared to conven-

tional incinerators | Complete ashing of sewage sludge and recovery of valuable substances phosphorus and nitrogen as fertilizer bases.

The process is composed of 6 essential treatment steps.

It is like every chain – every step is in the same way deciding about the good result of the holistic process.

The process produces from the total of primary and biological excess sludge electricity and fertilizer – nothing else.

The separated centrate from sludge dewatering goes back to the waste water treatment line over a simplified deammonification system in order to avoid ammonia backcharge.

Equalized heating balance. Heating only with own produced waste heat.

The share of cogeneration is intentional low because we transfer a maximum share of recovered energy towards electrical power in this way (about 40 % of the energy content of the biogas although the drying process reaches more than 90 % DS for the entire residue)

Either the waste air from drying and also the flue gas from incineration is purified with efficient purification stages.

All emission standards for effluent, waste air and flue gas are kept strictly.

THICKENING

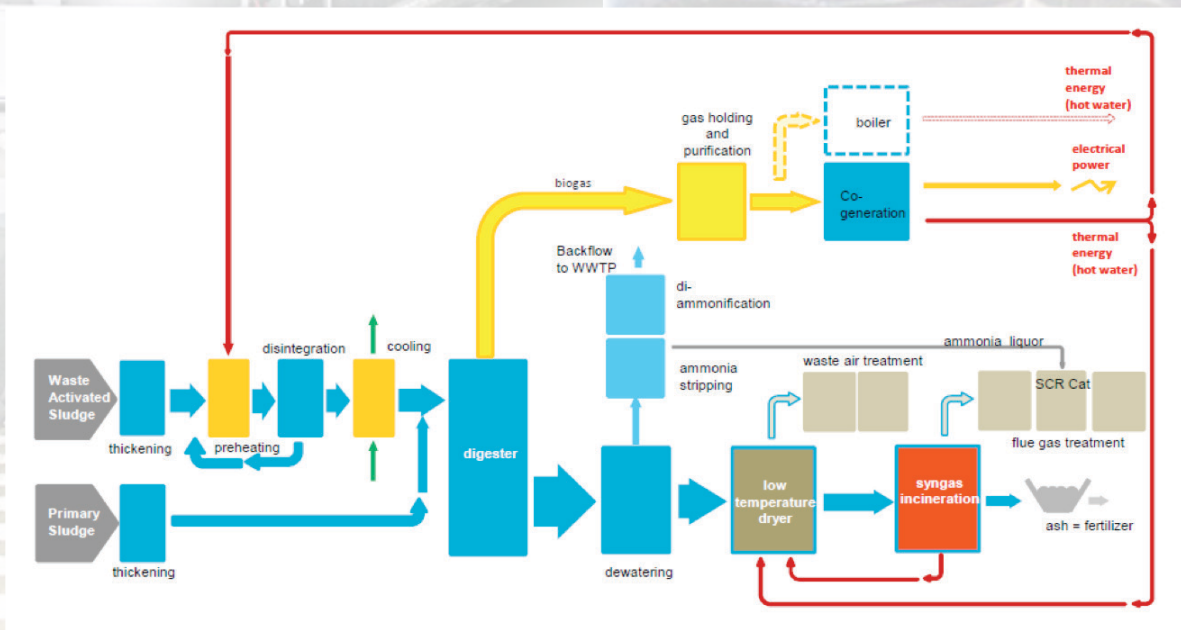
DISINTEGRATION

DIGESTION
CO-GENERATION

DEWATERING

LOW TEMPERATURE
DRYING

INCINERATION



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Management Board

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