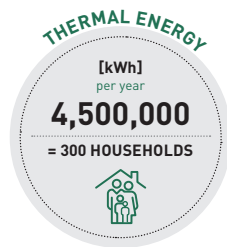
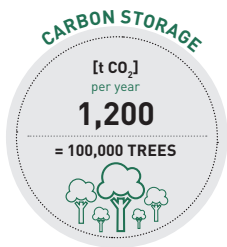


SEWAGE- SLUDGE RECYCLING ECO-FRIENDLY



PX1500 KS

Disposal or recycling of sewage sludge and industrial sludge is becoming increasingly demanding due to high environmental protection requirements and capacity bottlenecks.

PYREG CARBON TECHNOLOGY

YOUR SLUDGE RECYCLING SOLUTION

ADVANTAGES

Up to 90 % final mass reduction.

Energy efficient: The required energy is generated by the system itself, in addition, up to 600 kW_{th} of maximum thermal capacity can be used for other purposes.

Phosphorus recycling: The phosphorous contained in the sewage sludge remains available to plants after carbonization and can be marketed directly as fertilizer substructure.

The sewage sludge is completely recycled, **no „residuals“**.

Carbonization process is compliant with **EU environmental standards**.

CO₂ sequestration: The process of carbonization binds carbon on a long-term basis. After insertion of the phosphorous fertilizer in the soil, the carbon contained is removed from natural cycles for centuries.



SLUDGE



PYREG
NET ZERO TECHNOLOGY

SYSTEMS

| | PX500 | PX1500 |
|--|--|---|
| Combustible rating | 500 kW | 1,500 kW |
| Annual throughput OS, 10% water content | 1,200 t | 3,500 t |
| Annual production OS, 20% water content | 650 t | 2,000 t |
| Annual carbon removal potential | 400 t CO ₂ | 1,200 t CO ₂ |
| Maximum thermal capacity | 200 kW _{th} | 600 kW _{th} |
| Annual excess thermal energy | 1,275,000 kWh | 4,500,000 kWh |
| Annual hours of operation | 7,500 h | 7,500 h |
| Daily labour | 4 h | 4 h |
| Power consumption | 16 kW _{el} | 48 kW _{el} |
| Size | l 9,000 mm w 3,000 mm h 4,300 mm | l 13,000 mm w 3,000 mm h 7,800 mm |
| Additional technology module with flue gas cleaning system flue gas scrubbers, activated carbon filters | l 6,000 mm w 3,000 mm h 5,800 mm | l 12,000 mm w 3,000 mm h 5,800 mm |

OS = Original substance. Maximum figures based on 7,500 operating hours.

PYREG systems are designed as a compact, decentralized recycling technology that can easily be integrated into existing material cycles and infrastructures. The process is based on the principle of dry carbonization. That means, the sludge is not burned, but carefully degassed and then carbonized (500 - 700 °C), by admission of a tightly targeted air stream. The excess thermal energy can be used onsite (e.g. for drying) or fed into a local heating grid.

REFERENCES

WWTP LORSBACH, GERMANY

Operation company:

Abwasserzweckverband Main-Taunus

Location site: Hofheim (Taunus), Germany

Waste Water Treatment Plant (WWTP), Service: 50,000 PE

PYREG unit in operation since 2020: PX750

Sludge treatment:

Anaerobic sludge stabilisation

The energy required is completely covered by the thermal energy of the PYREG plant and the combined heat and power unit.

100 % self sustainable process. Approx. 90 % volume reduction

The carbonizates are **EU-wide marketable** as phosphorus fertilizer.

WWTP SILICON VALLEY CLEAN WATER, USA

Operation company: Bioforcetech Corporation

Location site: Redwood City, California, USA

Waste Water Treatment Plant (WWTP), Service: 200,000 PE

PYREG unit in operation since 2017: P500

Sludge treatment:

Drying [75 % volume reduction, 60 % less energy consumption vs gas dryer].

Carbonization with PYREG unit P500 [90 % final volume reduction, 100 % self sustainable process].

Marketing the carbonizates as natural soil conditioner to the customers in agriculture.