



**WATER RECYCLING TECHNOLOGIES – BG Ltd**

**Engineering and Innovation**

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## **Production of active organic fertilizer obtained from human waste activity**

"Water Recycling Technologies" Ltd. is a Bulgarian company that deals with the implementation and multiplication of new, innovative technologies in the field of ecology and in particular the processing of wastewater and sludge.

At the moment, we are successfully starting and applying (design and construction) a new generation of technologies in:

- ✓ Treatment and recycling of heavily polluted wastewater
- ✓ Processing and decontamination of sludge with concomitant production of soil-forming mixtures and organic fertilizers.

We create conditions and opportunities for an operational and quick solution to the main issue, namely: The return of organic waste to nature - as bio fertilizer or soil-forming mixture in real time.

- ✓ The full cycle of processing of organic waste is carried out within 2-3 hours from the moment of their entry into the complex.
- ✓ The working capacity of the complex changes easily due to the modularity of the structure.
- ✓ The technology is absolutely waste-free and up to 2-3 times less energy-intensive than similar technologies.
- ✓ Processing is based on the use of wave methods that have not previously been used in this direction. Physico-chemical processes, such as dispersion, disintegration, ionization, combine under the influence of electromagnetic fields. In this regard, in the processed substances, the physico-chemical reactions proceed immeasurably fast. Substances change at the intramolecular level.



Part of the soil-forming processes occurring in nature are largely due to the vital activity of microorganisms that feed on organic and mineral components. The main raw material for the production of biofertilizer using the technology we offer is decontaminated organic (plant and biological) waste from livestock farms, food processing plants, sludge from WWTPs and others.



Mobile installation and equipment for wastewater treatment and sludge processing - 10m<sup>3</sup> / hour

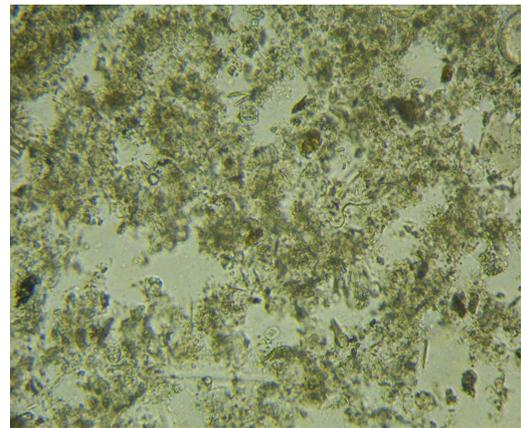
## Main stages of processing:

1. Creating a conditionally sterile substance.
  - ✓ Disintegrator
2. Separation of the liquid and solid phases.
  - ✓ Precipitator - Separator
3. Import of cultural complexes of soil-forming strains and components.
  - ✓ In order to prevent the creation of conditions for rapid development of pathogenic environment, colonies of friendly soil-forming microorganisms are immediately introduced, which enter the nutrient medium, which does not contain competing organisms, multiply explosively, creating powerful colonies that prevent the development of pathogenic flora. .

Microscopic photos:



**Before processing**



**After processing**

In the process of processing all the necessary organo-mineral components are preserved, the pathogenic microflora and the seeds are completely destroyed. Heavy metals are converted into safe compounds or removed.

No complex chemical reagents are used in the production process. and GMOs. .

Thanks to this, the obtained fertilizer is ecologically clean for the biocenosis and the soil.

Depending on the application and the type of soil in the production, different formulations are used for the composition of the mixture, ie. The processes are manageable

The technology used allows for the production of biofertilizer in two forms - liquid and dry fertilizer.

Application:

**Use of WWTP sludge.**



✓ The installation is integrated in the production scheme of the treatment facilities. The treatment is in accordance with the Ordinance on the procedure and manner of utilization of sludge from treatment plants and wastewater treatment facilities through their use in agriculture, adopted by CMD № 201 of 04.08.2016.

### **Treatment of wastewater and sludge from livestock farms**

✓ Restoration of sedimentary fields from animal husbandry and their transformation into quality biofertilizer, suitable for fertilization in agriculture.



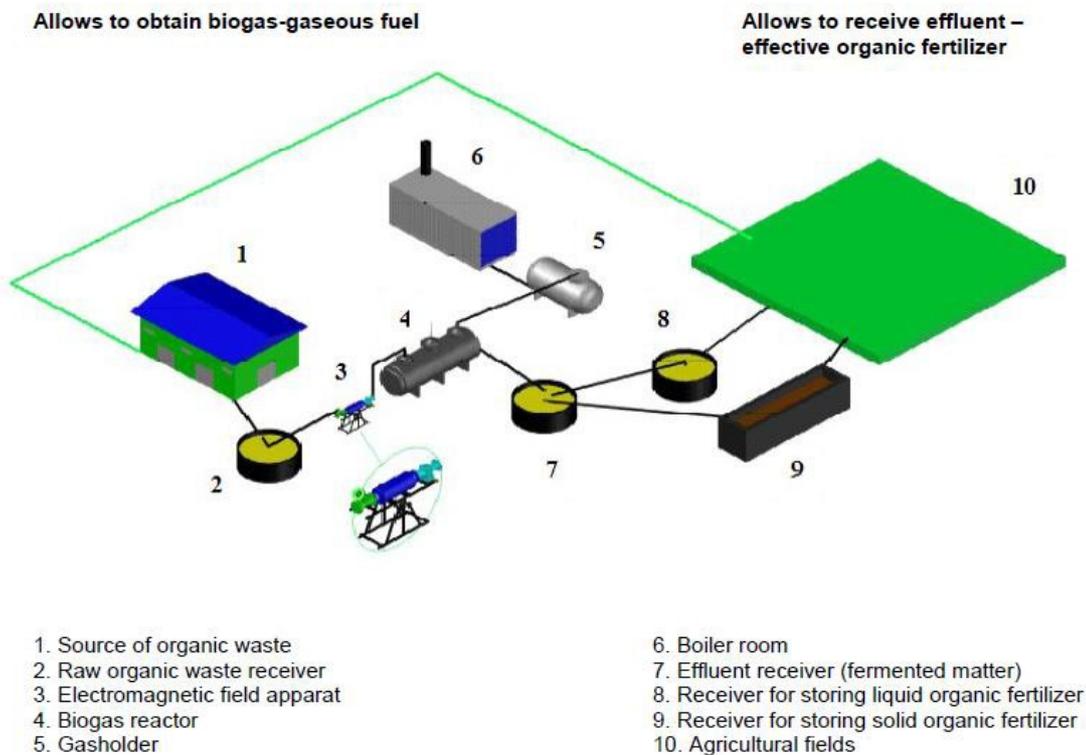
Treatment of any waste accompanying the vital and production activity of organic nature.

✓ Restoration of the soil structure of the industrial zones, landfills for non-hazardous waste, etc.

#### **Positive effect:**

- ✓ Elimination of the drying fields with the unpleasant emissions in the treatment plants, as well as multiple reduction of the costs for construction of the concrete facilities for the disposal of the sludge.
- ✓ Makes the construction of sedimentation lagoons and depots in animal husbandry meaningless.

**Anaerobic processing technology with preliminary preparation of organic waste in rotating electromagnetic field apparatus with the production of gaseous fuel - biogas**



The obtained products fully meet the requirements of the eco-norms of plant agronomy, no chemical and mineral components are used /, no harmful emissions are emitted, such as gas and secondary waste and meet the norms and regulations set in the legislation of Bulgaria and the EU.