



Editorial

New Technology for Sewage Sludge Utilization

Sewage: States and firms, Germany develop technologies for the reclamation of phosphorus. The new sewage sludge ordinance (Abf KlärV). There specifies that no more sewage sludge should be used as manure in future. The residue of the sewage of the treatment works is no more free.

By 2029 the managers of the biggest treatment plants commissioned after 2017 must translate into action the ordinance. Treatment works with 50000 inhabitants' have still time upto 2032. These should burn up exclusively sewage sludge and recover back phosphorus.

However the capacity limit of these plants is already attained consequently the costs exploded for the disposal of sewage sludge.

As for example stored 400 t in the compound of the treatment plants of Winhausen near Würzburg. The works managers not know which way the remaining residue from the sewage purification is to be disposed. "The disposal has been very difficult" they say.

Some managements have developed partly innovative methods in order to utilize the sewage sludge in a better way. Therefore Wasser Hamburg at the beginning of 2019 has laid the foundation stone for a phosphorus recovery plant in treatment work in Hamburg. For the first time comes here the Tetra-phosphorus method developed by sewage disposal giant Remondes for operation. According to Remondes this plant is the first design of this type. It should yearly extract 7000 tones of phosphorus acid 20000 tones sewage sludge ashes (slag). The 18.5 million euro costing construction project is sponsored by Federal Ministry of Environment (BMU).

Environment Senator Jens Kerstan (Green) sees Hamburg Wasser as 'Tactgiver of Innovation'. If all the treatment works would have the recycling plants, 60% of phosphorus import could have been avoided. Then phosphorus as manure in agriculture is to be abandoned. Several water suppliers and sewage disposers work on layout for monooxidation (combustion) throughout Germany. Rostock, Slavehagen, Cologne and Hildehein have taken corresponding decisions or have already developed concepts.

On this concept a series of research plans go on for the recovery of phosphorus. Gelsenwasser announced a partnership with Eary Mining. In one pilot study the Ash 2 Phos. Technology of Eary Mining should be put to the test. With successful course of the study a big plant could be installed (constructed) in 2023.

The new recycling methods are supported by Federal Ministry. Certainly there is a completely different domain such as how many drugs, medical aspects sewage sludge, remain relatively unresearched. The environment federal land officer (UBA) fixes therefore for a quick rise out of the total soil covering sewage sludge utilization.

A Swiss variant, the Trea Tech Sarl a spinoff of ETH Lausanne wants to isolate phosphorus out of undried sewage sludge. Therefore it is transmitted in gaseous condition with 220 bar precision and almost 400°C temperature. With that the solubility of phosphorus and mineral salts is so strongly reduced that it is crystallized and is to be separated easier. Above 90% of phosphorus could be brought back in the process.

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