New sewage sludge ordinance reforms sewage sludge utilisation and sustainable phosphorus utilization

Germany

Level: national

Summary

The new sewage sludge ordinance came into force on 3rd October 2017. One main objective is the sustainable and safe utilization of phosphorus by recovering phosphorus, especially from municipal sewage sludge. The recovered phosphorus should be returned to the economic cycle, e.g. as fertilizer in agriculture. With the prohibition of the soil-related utilization of sewage sludge from big sewage treatment plants (greater than 50,000 population equivalents) as fertilizer from 2029, the disposal of critical substances from waste water treatment with sewage sludge on soil and into the environment will be reduced.

Situation

In Germany meanwhile more than 60 % of the sewage sludge is burned, usually without using the phosphorus potential. Only ca. 30 % is utilized for agriculture or landscaping purposes (nutrient recycling). Most sludge not fulfils the legal requirements (fertilizer regulation, sewage sludge ordinance limit values) or is in competition with other fertilizers such as manure. Moreover, sewage sludge contains critical and risky substances from sewage which effects on soil and environment are not examined. In order to reduce the risks significantly, safe disposal of sewage sludge should focussed without losing the valuable phosphorus inside.

Strategy

The sewage sludge ordinance was fundamentally revised in 2017. Limit values of heavy metals and organic substances for the utilization of sludge as fertilizer are tightened. In 12 respectively 15 years the agricultural and landscaping use of sewage sludge from treatment plants over 100.000 respectively 50.000 PT is forbidden. The phosphorus from this sludge has to be recovered if its content is over 2 %. Phosphorus can be recovered directly from the sludge (at least 50 %) or after its thermic use. If sludge is burned at least 80 % of the phosphorus in the ashes has to be recovered. It is also allowed to store the ashes separately to later recover the phosphorus.

Results and impact

Since the ordinance entered into force recently, results can be expected after transition period in 12 to 15 years. Actually the disposal of sewage sludge is restructured in many cases, the trend for agricultural utilization decreases and techniques for the recovering of phosphorus are developed and verified in large scales.

Challenges and lessons learned

The implementation period just started, but as a challenge can be mentioned the development and implementation of new phosphorus recovering techniques and strategies into the existing marked.

Potential for replication

The German sewage sludge strategy with the reduction of pollutant inputs into soils and the protection of natural phosphorus resources could be used as an example for other countries.

Contact

Name: Unit: WR II 4; email: WRII4@bmub.bund.de
Organisation: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
Division Municipal Wastes, Thermal Treatment of Waste – Unit WR II 4