

## EIP-AGRI practice abstract

### Short title:

Technology for P recovery as pelletized struvite starting from digested sludge and wastewater with "NuReSys" crystallisation process

### Summary:

Uncontrolled struvite formation is a major cause of high maintenance costs and downtime on municipal sludge processing lines especially when combined with biological phosphate removal. The NuReSys technology wants to tackle these operational problems by controlling the struvite formation. It is a full scale proven technology and ready to contribute to a closed loop phosphorus driven feed/food agriculture. The advantages are the scaling prevention (based on limiting free soluble phosphate) and the improvement of dewatering of the bio solids, reducing the phosphorus load returning to the head of the municipal wastewater treatment plants (MWTP).

NuReSys technology can be applied on digested sludge or post dewatering. Even combining applications on both have already been designed and are operational at full industrial scale. The classical application of struvite precipitation is on MWTP at the outlet of the dewatering or on industrial water wastewater treatment plants at the outlet of an UASB reactor. A straight forward stripper/crystalliser combination can be installed. Struvite harvesting is quite simple because the struvite can easily be separated from the effluent. The second approach directly applied on digested sludge is a stripper for pH control and stirred tank reactor with MgCl<sub>2</sub> addition to promote active struvite formation.

The available capacity is 0.1-2.5 tons/day.

The produced struvite, Biostru © is a pure, contaminant free product ready for direct reuse or by preference as commodity product to be blended in with other nutrients to obtain an equilibrated nutrient ratio. Nutrient content (N-P-K %): 5.6 N 12.6 P 0 K - 10 Mg (% w/w).

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