

Strategies towards a sustainable phosphorus management in Austria

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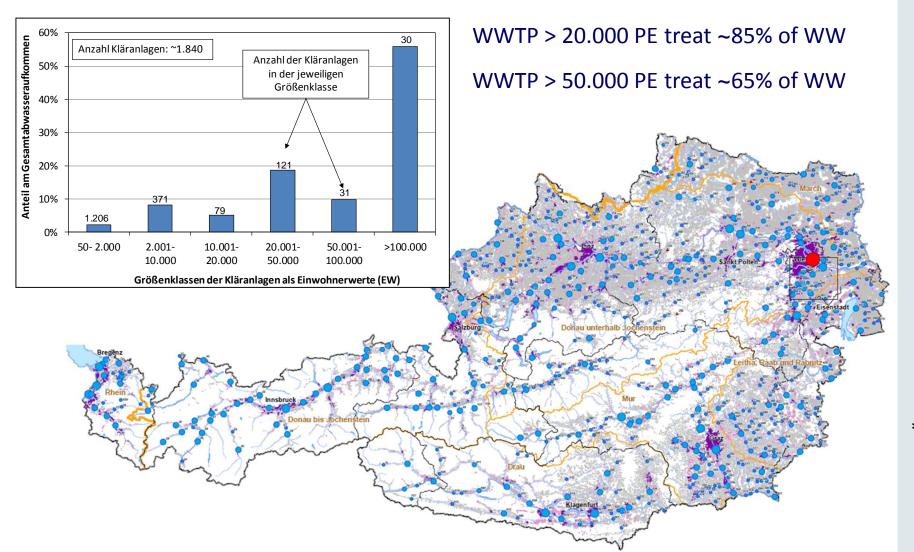


Background

- 8.7 million inhabitants
- ~90% phosphorus removal in WWTPs
- ~7.000 tonnes of phosphorus in sewage sludge
- limited agricultural use of sewage sludge (17%)
- increasing co-incineration (50%)
- diverse handling of sludge situation in different federal states



Wastewater Treatment Structure

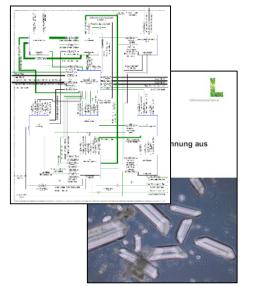




Early efforts to improve P sustainability



...driven by experts of wastewater and waste management in a joint effort 'Sewage sludge as a resource – position paper'



...accompanied by research projects

'Austrian phosphorus budget'
'Integrated comparative assessment of P
recovery technologies'



The federal waste management plan

Draft published in early 2017

- 'Master plan' for the coming 6 years
- No legally-binding character
- Revision of sewage sludge management strategy
- Stakeholder involvement?





Argumentation chain?

Due to exit P recycling from WWTPs >20.000 PE should be implemented (from ash, with exception <50.000 PE)

→ Draft plan subjected to open review process







Towards goal oriented approach

'Use of P in sewage sludge currently insufficient'

Goal to subject between **65 and 85%** of sludge to P-recovery by 2030

'Extension of agricultural sewage sludge application not future oriented'

'Mono-incineration mostpromising approach, but other approaches might pose viable alternative strategies'

Further system analysis and stakeholder involvement is needed



Project StraPhos (German)

- 'Sustainable Strategies for an Austrian Phosphorus Management'
- 10/2017 10/2020
- 2 main goals:
 - Increasing knowledge-basis on economic and ecological effects excited by different strategies
 - Increasing the involvement of political players and relevant stakeholders to find a common solution





Technical Aspects

- In depth evaluation of status quo
- Evaluation of different P-recovery strategies

Economic Evaluation **Ecological Impact**



Regional WW treatment infrastructure and sludge disposal

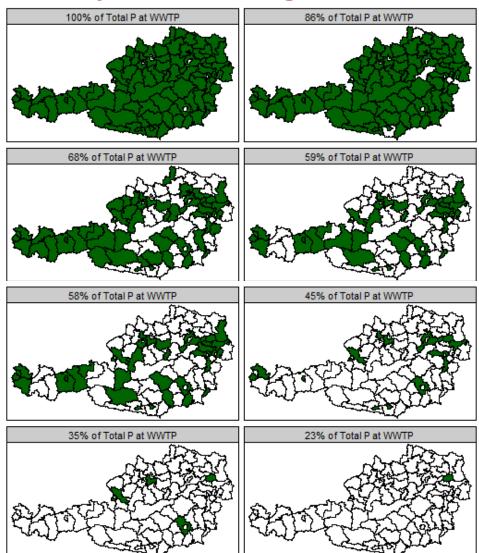


Characteristics of recovery and sludge treatment technologies (minimum sizes, recovery potentials, ...)

- Illustration of required infrastructure
- Deduction of adequate management strategies



Example: Finding 'P-Clusters'



Where? What quantity? What quality?

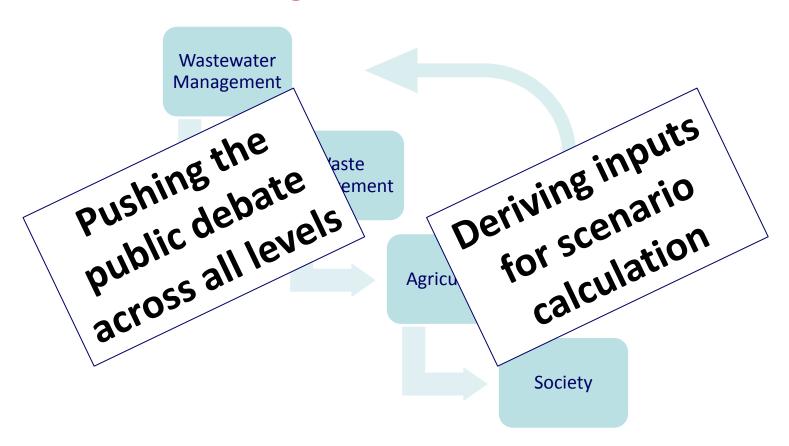


Adequate management strategies?

- Aligned with other goals for wastewater treatment improvement (energy efficiency, pollutant removal, synergies?, ...)
 - 20 g/kg TS? (impact anaerobic digestion, additives)
 - Recovery rate for sludge? (processes that recover from effluent?)
- Increases autonomy from PR market
- Promotes economic recovery
- Ensures that products can be integrated into the existing market



Stakeholder dialogue



- Individual discussions with federal states
- Open forum with representatives from all sectors



Next steps

Background Information Data Base

Transparent discussions

Aid Implementation

Building strategies before building legislation

Evaluate
Control
Mechanisms

Ensure that desired system is implemented



Thank you for your attention!

