Sewage sludge utilisation

Transforming wastewater treatment plants into resource recovery centers

The innovative PNX process revolutionizes traditional wastewater treatment by enabling on-site sewage sludge processing while simultaneously recovering valuable resources like phosphorus and nitrogen. This decentralized solution offers municipal and industrial operators a cost-effective way to manage sewage sludge while creating new revenue streams through resource recovery. By eliminating the need for external disposal and reducing transportation requirements, the system not only improves operational efficiency but also significantly reduces environmental impact.

Quick Facts

- Solution area: **Processes**
- Administrative level: **Municipality, District, State, Federation**
- Solution process: **Energy, Environment and sustainability**
- Technology: **Biotech, Information technology**

How it works

The PNX process represents an innovative approach to wastewater treatment and resource recovery, operating directly at municipal and industrial wastewater treatment facilities. This decentralized solution enables on-site sewage sludge processing while simultaneously extracting valuable resources like phosphorus and nitrogen. The system integrates seamlessly into existing wastewater treatment infrastructure, eliminating the need for complex transportation logistics and intermediate storage facilities. By recovering phosphorus earlier in the treatment process compared to traditional ash-based methods, the solution achieves comparable yields with reduced chemical usage and overall operational complexity.

The Big Picture

In an era where resource efficiency and environmental sustainability are paramount, this best-practice solution addresses multiple critical challenges simultaneously. It empowers wastewater treatment operators with greater autonomy in their operations while contributing to circular economy goals through resource recovery. The system's approach goes beyond mere waste management – it transforms treatment plants into resource recovery facilities, creating new revenue streams while reducing environmental impact.

The solution's significance extends beyond immediate operational benefits. By enabling local processing and resource recovery, it strengthens the resilience of municipal infrastructure while reducing the carbon footprint associated with traditional disposal methods. The modular design and digital monitoring capabilities ensure transparency and adaptability, allowing operators to optimize their processes continuously. This forward-thinking approach not only solves current challenges in wastewater treatment but also establishes a foundation for more sustainable and efficient public services in the future.

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