

## Effective solidification of digestate

### Development status

#### Phase 3

**Technology validation and implementing it in real environment.** Testing the technology outside of the laboratory and its adjustment to external conditions.

### IP protection status

N/A

### Partnering strategy

*Co-development, Collaboration, investment, licensing, spin-off*



### Institution



UNIVERSITY  
OF PARDUBICE

University of Pardubice

### Challenge

The development of biogas plants focused on processing biodegradable waste with the goal of producing low-emission biogas or biomethane (as a substitute for natural gas) leads to the overproduction of so-called digestate, which is the liquid residue remaining after the anaerobic degradation of biomass. This material can be used as a fertilizer; however, its main disadvantages include problematic storage — in terms of capacity, cost, and odor emissions from the liquid digestate. Additional issues include high transportation costs when used directly as a fertilizer, limited commercial usability, and a relatively low nutrient content compared to commonly used fertilizers.

### Description

The described solidification technology for liquid odorous digestate is based on the application of dewatering additives, which enable the stabilization of the originally liquid digestate into a solid, odorless product without nutrient loss and without the need for evaporating excess water. This product is commercially usable as a green fertilizer (e.g., for hobby gardeners). A key advantage of this technology is its simplicity compared to digestate thickening methods (e.g., using evaporators), resulting in lower capital investment requirements. It can also be easily processed into user-friendly pellets or granules, while remaining a biofertilizer, as all contained nutrients originate from the original fermented biomass. Solidification significantly facilitates both storage and transportation of the digestate.

### Commercial opportunity

The technology is applicable for operators of biogas plants. It also provides a commercially viable, pelletizable alternative fertilizer in the form of solidified digestate derived from biodegradable waste, aligning with the principles of circular economy.