PRESS RELEASE

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PILOTING THE PERFORMANCE OF A FOURTH-GENERATION HYBRID BIOREACTOR AT THE RANUA WASTEWATER TREATMENT PLANT

Biometa Finland Oy will deliver a pilot-scale, fourth-generation hybrid bioreactor to Pohjois-Suomen Biokaasu Oy for processing municipal wastewater. The delivery of this new type of high-rate bioreactor is part of the second phase of Pohjois-Suomen Biokaasu Oy's *"Northern Circular Economy Ecosystem"* project, for which the Ministry of the Environment has granted a 65% investment subsidy.

The fourth-generation hybrid bioreactor incorporates technology further developed by Biometa Finland Oy, as well as combined operating principles from previous generation solutions. This is presumably the world's first commercial CEGSB (Carrier Enhanced Granular Sludge Bed) bioreactor to be delivered in this size class. The CEGSB technology is designed to efficiently reduce the chemical oxygen demand (COD) of incoming municipal wastewater biologically, while simultaneously producing biogas under constantly changing process conditions. The optimal placement for the reactor is therefore before the main wastewater treatment processes. This aims to both enhance the efficiency of these processes and significantly increase the wastewater treatment plant's own energy production. Compared to commonly used biogas reactors worldwide, the physical size of the CEGSB bioreactor in this case is estimated to be 250 times smaller for the same wastewater pretreatment capacity and efficiency. The bioreactor will be delivered ready for operation during 2025. The goal is to begin piloting at the Ranua wastewater treatment plant in early 2026 and to verify the technology's functionality through long-term measurements in an industrial environment. Mika Impiö from Pohjois-Suomen Biokaasu Oy, Juha-Matti Sääskilahti from Ranua Infra Oy, and Riitta Alin from Biometa Finland Oy state that it is great to jointly promote novel, domestic environmental technology. This is seen as an innovation with significant international potential and the ability to improve the state of the environment.

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Pohjois-Suomen Biokaasu Oy is a company owned by 21 farms, with the purpose of producing traffic biogas by digesting slurry manure and surplus feed. The owner farms are located in Ranua, Pudasjärvi, and Simo. The plant is the largest farmer-owned biogas plant in the country.

Ranuan Infra Oy is a locally operating, multidisciplinary company owned by the municipality of Ranua. Company’s services include water supply, district heating production, distribution and sales, fiber optic network construction and related services, as well as the rental of industrial and commercial properties.

Biometa Finland Oy develops Cleantech innovations for the utilization of organic side streams, which include biogas and bioproduct plants based on hybrid reactors. The goal is to commercialize solutions that improve the state of the environment and are economically viable for growing markets.