Utilities Tech Outlook

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WASTE MANAGEMENT EDITION

WABIO

Converting Waste to Green Biomass Energy


Raphael Fitz, CEO

The agricultural sector generates large quantities of solid waste, which is indiscriminately dumped or burnt by farmers with little to no knowledge of waste disposal practices. Global leaders are therefore prioritising effective waste management initiatives with ever increasing agricultural production to reduce human and environmental health stress while increasing farmers' awareness.

They see a huge potential for agricultural waste in generating biomass energy. It doesn't just reduce the health menace arising from open-field agricultural solid waste burning, but it also aids in alternative energy production.

WABIO is at the leading edge of offering biomass technologies to turn waste into (energy) wealth. It transforms organic feedstock into electric power, biomethane, bio-compressed natural gas (CNG), bio-liquified natural gas (LNG), heat, green technical liquid CO2, dry ice, and carbonised CO2.

"We have come a long way from starting as an R&D company in 1990 to constructing the world's biggest commercial biogas plant (30 MWth) in 2020. Our waste-to-green-energy technology is the culmination of years of experience and research," says Raphael Fitz, CEO of WABIO.

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WABIO's intense passion for making the world a better place is seen in its work and name, an abbreviation for "We Are Bio." With its best-in-class biogas plant technology, WABIO doesn't simply solve waste management challenges, WABIO makes waste profitable.

WABIO's biogas plants process up to 55,000 tons of packaged or unpackaged food waste yearly. It starts with the trucks delivering agricultural and solid municipal wastes to the plant, which are separated based on wet and dry wastes and taken to different treatment areas. A pretreatment process helps separate packaging material and sort inorganic materials like metals and plastic.

Organic substrates are taken to underground tanks, where pathogens are eliminated by heating the substrate at about 70 degrees Celsius for one hour. The next stop is the fermentation tank, where most of the biogas is produced at about 42 degrees Celsius and transported to the gas storage tank. Biogas is dried, compressed, and used to produce heat and electricity.

WABIO's biomass technology stands out from conventional biogas practices as it can generate twice as much green energy as conventional refuse-derived fuel (RDF) plants.

It is also one of the first biogas plants to efficiently process lignocellulose (plant dry matter). WABIO has a proprietary and patented methane fermentation operation that can process lignocellulosic materials, including rice husk, rice straw, wheat straw, and food waste.

WABIO has established partnerships with ambitious net-zero pledged players in the food and agricultural domain. They guarantee the feedstock and the offtake agreement, while WABIO makes revenue from the sales of electric power and gas, and its by-product organic fertilisers. Through its endeavours, WABIO is helping the food and agricultural sector get a step closer to achieving an ideal circular economy.