

Waste to Watts,an Investigation of Microturbine Cogeneration from Dairy Waste Biogas. (A05-stone092017-Oral)

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Abstract:

Energy production from anaerobic digestion of organic wastes is not a new concept. Tens of thousands of small digesters are found in Asia, over 600 farm digesters in Europe, and over 100 farm digesters in the US over half no longer in use. Cost is the primary reason why anaerobic digestion technology that reduces solids and odors, kills pathogens and produces energy has not been more widely used in the US. Urban encroachment on dairy farms, public environmental awareness, impending state and federal regulations and volatile energy costs have changed the outlook. USDA-ARS, US-DOE Office of Bio-Power and National Energy Technology Laboratory are evaluating micro-turbine generator technology at the Beltsville, MD ARS Dairy Manure Digester. Micro turbines offer scale and maintenance advantages that may be economical to small dairies. Scientific and economic assessment of the waste stream, gas production, exhaust emissions and power generation are conducted on multiple fuel combinations.

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