

Energy and Life Cycle Analysis of Co-Generation of Biogas from Cattle Manure

Wolfgang Tentscher, C. Dumsch

Abstract

This paper presents the results of evaluation of biogas generation from cattle manure, under German conditions, and conversion of biogas to electricity using energetic and life cycle analysis. A range of capacities from about 70 to 250 kW for digester and co-generation set are considered including benefits for heat utilization. It is found that the energy balance with-out heat benefits would be 40 to 140 times the energy input. Within the LCA selected environmental categories, CO₂-reduction potentials, cost of CO₂-equivalent-reduction, internal and external costs and energetic payback periods are computed and discussed.

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