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BIOGAS TECHNOLOGY AS AN INNOVATIVE ELEMENT OF ENVIRONMENTALLY-FRIENDLY CONTAMINATED SITE REMEDIATION AND WASTE DISPOSAL

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Abstract

Many areas exist which, due to pollutant contamination, are not appropriate for the cultivation of crops for use as fodder or food. Nevertheless, such areas can be used, and indeed often be restored over the long term, when they are utilized for energy crop cultivation. Through the use of a special two-stage biogas technology, the GICON Process, these areas can be used for energy production. Simultaneously, contaminants will be removed from the soil and either destroyed in the biogas process or selectively isolated. Remediation measures are thus co-financed by revenues from energy production. The concept is illustrated through means of an example using an organically-contaminated alluvial site.

The economics of such projects can be further enhanced if the projects are coupled with the utilization of biogenic wastes. On the one hand, through the application of biogenic wastes, the substrate matrix for the biogas plant is improved; on the other hand, landfill space is spared and a significant effect towards reduction of greenhouse gas emissions is achieved.

Key words
biogas, phytoremediation, waste to energy, anaerobic digestion

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