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ECONOMIC EFFICIENCY
OF BIOGAS TECHNOLOGIES USEING

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Biogas technologies belong to one of the most perspective directions of renewable energy production. Biogas is received by hydrogen or methane fermentation of organic biomass in anaerobic conditions. It is offered to use the following formula for calculation of a payback period ($T_П$) of the biogas project, according to ТКП 17.02-05-2011:

$$T_П = \frac{k \cdot P_{уст}}{П_Э + П_{ПГ} + П_{ЗВ} + П_{УД} + П_{УР} + П_X + П_O - Z_P - Z_C - A_М - H_C - H_P},$$

where k are specific capital investments in a biogas plant; $P_{уст}$ is installed capacity of a biogas plant; $П_Э$ is income from sale of electric and heat energy; $П_{ПГ}$ is income from sale of voluntary reductions of greenhouse gases emissions; $П_{ЗВ}$ is decrease in payments of an ecological tax in connection with reduction of pollutants emissions; $П_{УД}$ is income from sale of the received bio-humus as fertilizers; $П_{УР}$ is income from increase in productivity; $П_X$ is economy on reduction of chemicals volumes brought in the soil; $П_O$ is economy on reduction of dumped drains volumes, decrease in load of treatment facilities; Z_P are annual assignments on service and repair of a biogas complex; $A_М$ are annual depreciation charges. However, assessment of income from electric energy sale is made generally in practice. The possibility of heat energy use is considered sometimes. It is necessary to include ecological and agro-technical factors for increase the cost efficiency of biogas projects, whenever it is possible.