

BIOGAS AND “GREEN TARIFFS” IN UKRAINE – A PROFITABLE INVESTMENT?

Short abstract.

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Ukraine has a biogas feedstock potential, that under current market conditions could allow to substitute 3-7% of annually produced electricity in Ukraine. To assess the profitability of biogas production in Ukraine we are differentiating between three feedstocks (pig and cattle manure, chicken dung and corn silage) and three scales of plants (installed electrical capacities of 0.5, 1 and 3 MWe/hour). For the analysis of costs and benefits of biogas production we divide costs into 2 groups: production, and operation and maintenance costs. The benefits can be obtained from the sale of electricity (produced from biogas and sold by green tariff) and from the sales or own use of bio fertilizers. After estimations of costs and benefits, we calculate the internal rates of return (IRR), payback periods (PP) and net present values (NPV). These indicators show the level of profitability of the biogas plants.

Feedstock used	Feedstock price, UAH/t	Biogas plants electrical capacity					
		0.5 MWe/h		1 MWe/h		3 MWe/h	
		12% interest rate	28% interest rate	12% interest rate	28% interest rate	12% interest rate	28% interest rate
Silage corn	160	marginally profitable	not profitable	profitable	profitable	very profitable	profitable
	139	marginally profitable	not profitable	profitable	profitable	very profitable	profitable
Manure	35	profitable	profitable	profitable	profitable	very profitable	profitable
Chicken dung	50	marginally profitable	not profitable	profitable	profitable	very profitable	profitable

Source: Own calculations

The results show that biogas plants operating on pig and cattle manure are the most attractive for investors by all the plant scales. Biogas plants working on chicken dung and corn silage are profitable only if their capacity is above 1 MW/h.