Reducing Capital Cost and Providing Electricity to Grid by Power Generation from Poultry Farms

Abstract

Poultry farms for meat or egg production is considered to be a huge business. However, waste including manure can give biogas that can produce electricity. In Pakistan load shedding problem remains throughout the year, therefore biomass being the cheap and efficient fuel for power generation can overcome this problem. This research has been conducted in Abbottabad district of Khyber Pakhtunkhwa. Data has been collected from poultry farms for power generation as number of chickens, amount of manure, amount of biogas released and generation of biogas. Biogas plants initial investment has been estimated to be from Rs. 16000 to Rs. 25000 and compared with monthly and annual production of biogas for overall economical variability. Net Value (NV) of electricity, Rate of Return and Payback period has been concluded by Electrigaz application. Large farms with more than 50000 chickens has been very few, while medium with 5001-15000 chickens are bit more in number, and small farms with 5000 chickens are mostly greater in number. Results have showed that large farms payback of biogas plant is upto one year, whereas medium and small farms are two and four years respectively. Biogas and digestate has been produced by anaerobic digestion. The digestate
has significant benefits to the agricultural lands, environment and economically. The study concludes that such techniques can enhance power generation and highly control the shortfall of electricity and also intend to run projects for rapid development.

References


Index Terms

Computer Science

Applied Sciences

Keywords

Poultry farms, manure, Net Value (NV), Electrigaz, biogas plant