

OPTIMIZATION OF RURAL AREA BY IMPLEMENTATION OF BIOGAS BANK AS A RENEWABLE ENERGY RESOURCES IN INDONESIA

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ABSTRACT

The rapid world population growth causes energy resources in the world becomes one of the very important resources. Energy is one of the basic necessities for human activity in the times. Increasing energy needs in order to fulfill the life society needs. Energy cannot be destroyed, but as the law of conservation of energy stated that energy can be converted into other forms. Energy form has changed within the time (age). Skill-based planning and intensive maintenance are important to achieve the efficiency of energy utilization. Especially for rural society who are a lack of facilities and infrastructures, especially in electricity supply, added with the cost of installation and electricity usage which are quite expensive.

Electricity is a source of energy, which is classified into renewable and non-renewable. Biogas is a renewable energy that can be used as an alternative energy for households electricity. Biogas is produced from the decomposition of organic waste material involving anaerobic microbial activity in the biodigester. The process of degradation of organic material without involving oxygen is called anaerobic digestion gas that produced by most (over 50%) in the form of methane. Utilization of organic wastes from agriculture and livestock activities for producing biogas can reduce the dependence for commercial energy needs, such as cooking and electricity needs. Biogas bank is a system of organic waste utilization of agricultural-and-livestock-based on the community. The system that adopted in biogas bank similar with the bank in general. People will give the organic waste from their agricultural and livestock activities to biogas bank. After that, they will have an account that will list the quantities of waste has been deposited in the biogas bank. The deposited wastes then will be processed into biogas and converted to electricity. The amount of waste is converted into the amount of electrical power that will be distributed to the home of the account owners. Therefore, the implementation of biogas bank system is expected to help rural society to save their spending on household electricity usage.

Keyword: *biogas, biogas bank, energy, renewable, resource*