

BIOGAS AS A SOURCE OF RENEWABLE ENERGY OBTAINED FROM THE RECOVERY OF FOOD INDUSTRY WASTE

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One of the main problems of mankind in the present stage is the limited level of energy resources, represented by the resources energy fossils, respectively: gas, coal, and oil. Next to this energy problem, there was another problem related to gases with affect greenhouse gases, which cause major climate change. With increasing and diversified consumption worldwide, the production of waste does not stop, it increases in quantity and quality, thus causing enormous risks to the environment and consequently on the health of the population.

This article investigates the topic of finding a solution to protect and remedy the ecological problems caused by the food industry, namely the potential of biogas. Biogas is a combustible gas, which consists of methane, carbon dioxide, and small amounts of other gases and trace elements, which arise through the processes of fermentation or gasification of various organic substances. Biogas is considered an alternative fuel or renewable energy source so that the energy obtained from the biomass chain → biogas → electricity or heat (figure 1), is renewable energy because the carbon dioxide released into the atmosphere when burning biogas comes from carbon dioxide assimilated by plants in the vegetation period, respectively from the fodder consumed by the animals. According to the Kyoto Protocol, this carbon dioxide is recirculated in a closed circuit, unlike that from the burning of fossil fuels (natural gas, coal, crude oil) which burns carbon dioxide that was assimilated in prehistoric times, being considered a contribution to the current atmosphere.



Fig. 1. The multitude of ways to obtain biofuels.

Biogas produced by the anaerobic digestion (AD) process is cheap and offers the possibility of treatment and recycling of a variety of residues and agricultural by-products, various biowaste, organic wastewater from industry, sewage, and sewage sludge, in a sustainable and "friendly" way with the environment. At the same time, biogas brings a large number of socio-economic benefits, both for farmers directly involved in its production and for society as a whole. For all these reasons, biogas resulting from AD processes is one of the main priorities of the European strategy on biofuels and renewable energy.

Key words: biogas, industry, biofuels, renewable energy, ecology.

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