

BIOMASS FROM AGRICULTURE AS RENEWABLE ENERGY SOURCE IN THE REPUBLIC OF MACEDONIA

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Abstract

The use of biomass energy, besides providing efficient waste disposal and energy production, protects our environment. Biomass is the oldest source of energy that man has used, and represents a collective term for various, most diverse products from agriculture. Renewable energy sources are one of the crucial components of the sustainable development, giving rational economic, ecological and social effects.

Due to favorable climatic conditions, Republic of Macedonia has significant potential to use biomass byproducts from agriculture. According to the energy balance for 2000, the biomass contributed with 7.6 percent of the gross national consumption and covers about 12.7 percent of the total national energy consumption. Using alternative sources of energy has important role because of increasingly demanding environmental standards, as well as the obligation to reduce greenhouse gas emissions. From the legal and institutional aspect, the basic elements for renewable energy sources are provided in the Law on Energy (Official Gazette of the Republic of Macedonia No. 63/2006, 36/2007, 106/2008), which, among other things, promotes the utilization of renewable energy sources. About 76% of households in the Republic of Macedonia use biomass for heating and 80% of biomass used in the country is fire wood. Crop residues are underutilized, and grape pruning residues are used rarely and in certain regions. Orchard pruning residues are concentrated in few regions and can be used for production of energy.

Republic of Macedonia theoretically could have available a very large amount of agricultural biomass for energy production. Expected ecological, economic and social benefits of biomass byproducts from agriculture are investigated.

Key words: *Renewable Energy, Biomass, Agriculture, Environment, Sustainable development.*