

CHARACTERISTICS AND FEASIBILITIES TO USE WASTE FROM LANDFILL TO PRODUCE ENERGY: CASE STUDY FOR LITHUANIA

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Abstract

Over the past decades, the amount of waste generated in the world has increased several times and continues to grow steadily. According to the World Bank, more than two billion tons of municipal solid waste have generated annually. It is expected that by 2050 this volume will increase to 3.4 billion tons. There is legislation on waste management that establishes a hierarchy of available waste treatment or management technologies. The European Parliament obliged the countries of the European Union to reduce the amount of waste sent to landfills. And as a result, Lithuania has set a goal - to reduce the amount of waste taken to the landfill to 5%. However, it should be noted that before the introduction of sorting technology, all waste was sent to landfill.

For example – the Alytus landfill. From the foundation, waste is accepted to the landfill by the waste management agreement. The company adheres to strict environmental management standards and implements the principles of a circular economy. However, the best type of waste disposal is the recycling of materials, preferably into energy. This goal is relevant, as natural energy resources are depleted, and it is necessary to look for alternative fuels. For this necessary to know the main properties of fuel – morphological composition, humidity, ash content, net calorific value, chlorine, sulfur and mercury content to consider fuel from landfill waste as an alternative. As a result of the excavation at the Alytus landfill, the material was obtained for further study. In the course of the research, results indicated that the waste from the Alytus landfill could be used to produce energy.

Using waste from landfills as an energy resource will allow Lithuania to reduce the consumption of natural energy resources and bringing it closer to achieving the goals of the circular economy.

Keywords: Municipal solid waste, Characteristics, Landfill, Fuel, Energy