

عنوان مقاله:

Potential for energy recovery from municipal plastic wastes generated in Nigeria

محل انتشار:

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نویسندگان:

O.F. Olusunmade - *Department of Mechanical Engineering, College of Engineering, Federal University of Agriculture, Makurdi, Nigeria*

T.A. Yusuf - *Department of Mechanical Engineering, College of Engineering, Federal University of Agriculture, Makurdi, Nigeria*

C.O. Ogunnigbo - *Department of Mechanical Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria*

خلاصه مقاله:

Management of municipal solid wastes (MSW) in most developed societies now involves the use of thermo-chemical conversion methods. This leads to energy and material recovery while also protecting the environment. However, till date most of the wastes generated in Nigeria (including plastic wastes) are either land-filled or openly burnt. These methods are not sustainable and environmentally non-friendly. The reason is that so much space will be needed to accommodate the ever increasing wastes as a result of land-filling and open burning leads to environmental pollution and health challenges. Also, the inherent energy in plastic wastes, as a result of the fact that they have their origins from oil and gas, is not recovered for the benefit of meeting the energy requirements of the populace. Meanwhile there is serious inadequate supply of heat and electricity, the production of which could be improved if the plastic wastes are also applied for electricity and heat generation. This study estimated the amount of energy loss due to the prevailing method of disposal adopted for plastic wastes in terms of quantity of oil and electricity that could have been produced if thermo-chemical approaches were adopted for these wastes. It showed that about 17.3 million barrels of crude oil (worth about \$1 billion) and 7.1 million MWh of electricity (capable of powering 4.4 million households) could be produced from the plastic wastes generated in the country. Therefore, plastic wastes should be embraced and . treated as a resource rather than wastes

کلمات کلیدی:

(Electricity, Nigeria, Plastic wastes, Pyrolysis, Waste-to-Energy (WTE

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