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Cost benefit analysis of biogas generation from organic waste: A case study Rawalpindi Pakistan

Muhammad Umer Aziz[1], Imtiaz Afzal Khan[2], Xu linyu[1]
[1]Bejing Normal University, China
[2]Hanyang University, Republic of Korea

The present study based on to evaluate the biogas potential of solid waste from Rawalpindi city, furthermore to perform the cost benefit analysis (CBA) to find out that the use of this bio gas generation is economical for the household use or not. Lack of segregation knowledge was the main reason behind the non-effectiveness of bio methane potential, in our study we find out the 40% waste was related to food waste (kitchen waste, rotten fruits and vegetables, leaves etc.) and none of was separated on source and mixed with inorganic waste. By analysis of 30 days of food waste samples from transfer point, we find the chemical composition ratio that includes 37.10%, 37.60%, 1.40% and 7.39% of oxygen, carbon, nitrogen and hydrogen, respectively. 351 LCH4/ Kg of VS was produced from the food waste generated from the Rawalpindi, waste with 70 % consumption of volatile ratio. In broader prospect it will help to produce 1.2 MW of energy, which contributed to 9% energy consumption of city, moreover if we add this potential to CNG utilization it will help to manage the 14 % CNG stations consumption of city. The 19% increase in production of biomethane will be observed in combination of animal manure with solid waste. It will save 0.2 Million dollar per year spent on importing LPG for the city.

umer.aziz443@gmail.com