

## Documents

Nizami, A.S., Rehan, M., Waqas, M., Naqvi, M., Ouda, O.K.M., Shahzad, K., Miandad, R., Khan, M.Z., Syamsiro, M., Ismail, I.M.I., Pant, D.

**Waste biorefineries: Enabling circular economies in developing countries**

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**Abstract**

This paper aims to examine the potential of waste biorefineries in developing countries as a solution to current waste disposal problems and as facilities to produce fuels, power, heat, and value-added products. The waste in developing countries represents a significant source of biomass, recycled materials, chemicals, energy, and revenue if wisely managed and used as a potential feedstock in various biorefinery technologies such as fermentation, anaerobic digestion (AD), pyrolysis, incineration, and gasification. However, the selection or integration of biorefinery technologies in any developing country should be based on its waste characterization. Waste biorefineries if developed in developing countries could provide energy generation, land savings, new businesses and consequent job creation, savings of landfills costs, GHG emissions reduction, and savings of natural resources of land, soil, and groundwater. The challenges in route to successful implementation of biorefinery concept in the developing countries are also presented using life cycle assessment (LCA) studies. © 2017 Elsevier Ltd

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