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In cooperation with:

Harnessing Energy from Waste: Achieving Energy & Environmental Solution for Communal Resilience

Background

Bangladesh is a densely populated country, where a huge volume of solid waste is generated every day in urban and semi urban areas. Moreover with rapid economic growth and expansion of urbanization and industrialization, major cities of Bangladesh are facing the complexity of municipal solid waste (MSW) management. Bangladesh has yet not been able to manage the huge volume of solid waste generated in the country in a sustainable way. On the other hand, Bangladesh is making every effort to ensure energy access to every household and industry.

To handle this complex nexus, energy generation from waste could be a potential solution. MSW can be used to generate renewable energy, especially in the major municipalities where waste is available and collected in a systematic manner.This has also been rightly identified in the National Fuel Diversification Strategy.

Waste to energy solution is not only sustainable but actually regenerates the ecosystems where they are produced. Moreover, harnessing energy from waste is also linked with Bangladesh's ambition of attaining UN SDG (Sustainable Development Goal) 7 of accessing sustainable energy and SDG 11 of making communities more sustainable and resilient.

Our Approach

In light of above context, the Government of Bangladesh, through Sustainable and Renewable Energy Development Authority (SREDA) of the Ministry of Power, Energy and Mineral Resources (MPEMR) requested the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH to conduct a feasibility study at Keraniganj Upazilla, near Dhaka city on exploring possibility of waste to energy (WTE) conversion in the area. The Renewable Energy and Energy Efficiency Programme of GIZ conducted the study to support Bangladesh Government in developing a model project that can be replicated in similar Upazillas/ Municipalities throughout the country by using waste to generate energy.

The study has revealed:

(a) Initially, dry fermentation biogas solution is recommended to implement a small scale pilot project initially at Keraniganj, using organic waste collected from local households, markets or commercial entities.

(b) This biogas can generate electricity and heat for thermal processes.

(c) Condensate from the biogas plant is proposed to be used for composting.

(d) Waste from Keraniganj's garment factories and residual waste from the biogas plant are recommended to be used to produce RDF (Refused Derived Fuel) as a fuel option in Fixed Chimney Brick Kilns.

(e) 4-5 MW electricity could be generated from the waste in Keraniganj area depending on a suitable waste management plan.

The Feasibility Study Report has been well accepted by the Ministry of Power Energy and Mineral Resources (MPEMR) which has assigned Bangladesh Power Development Board (BPDB) to implement a pilot project based on the recommendations from the study. The tendering process for this purpose is ongoing.

Left: A waste disposal site at Keraniganj

Right: Handover of the feasibility study report to the Honourable State Minister, Ministry of Power, Energy and Mineral Resources

Existing Waste Management System in Keraniganj (Case Study)

Future Prospect

WTE is an important concept for any efficient waste management system. Turning waste into environment-friendly energy benefits the society in numerous ways which can contribute towards developing a greener economy.

In December 2015, GIZ facillitated a national seminar on "Harnessing Energy from Waste : a Path way towards Achieving Energy & Environmental Solution Addressing SDG for Communal Resilience", organized by SREDA. The workshop stimulated a useful discussion leading to pathways for harnessing the huge untapped energy from waste through appropriate policy, technology and implementation modality.

GIZ envisions to support piloting and to develop composite business models for energy production from not only municipal solidwaste, but also waste from slaughterhouses, poultry and cattle farms.To make this effective, GIZ also intends to undertake institutional capacity development measures for relevant stakeholders.

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Registered offices Bonn and Eschborn, Germany

Renewable Energy and Energy Efficiency Programme
PO Box 6091 , Gulshan 1
Dhaka 1212, Bangladesh
T + 880 2 5506 8746-52
F + 880 2 5506 8753
giz-bangladesh@giz.de
www.giz.de/bangladesh

Author
S. M. Zahid Hasan

Layout
Ananya Rubayat

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Addresses of the BMZ offices

BMZ Bonn
Dahlmannstraße 4
53113 Bonn, Germany
T +49 (0)228 99 535-0
F +49 (0)228 99 535-3500

BMZ Berlin
Stresemannstraße 94
10963 Berlin, Germany
T +49 (0)30 18 535-0
F +49 (0)30 18 535-2501

poststelle@bmz.bund.de
www.bmz.de