

Government of the People's Republic of Bangladesh
Sustainable and Renewable Energy Development Authority
Technical Assistance for Renewable Energy Resource Assessment and Piloting (TARERAP)
Project

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Terms of Reference (ToR)
for
Detail Feasibility Study and Pilot Run of Slaughterhouse Waste Based BIOGAS Plant in
Bangladesh

1. Background

Sustainable and Renewable Energy Development Authority (SREDA) is implementing a technical assistance project named "Technical Assistance for Renewable Energy Resource Assessment & Piloting" supported by the World Bank (WB) funded the Scaling Up Renewable Energy (RE) Project to improve the renewable energy sector in Bangladesh. The support encompasses feasibility assessment and pilots of renewable energy technologies. The program will assist in ensuring access to affordable and reliable electricity for all citizens by 2021 – the vision of the government of Bangladesh.

Bangladesh Government has declared an energy roadmap to help achieve vision 2041. According to the roadmap, renewable energy technology is likely to be contributed 10% of total energy in the next 20 years. To meet the vision of the government of Bangladesh, detailed feasibility study and other relevant assessments along with a pilot project implementation in relation to slaughterhouse base biogas generation are prerequisites.

Development of organic material as sources of renewable energy through biomass, biogas, biofuel, bioreactor, algae fuel, biohydrogen, and so on, with better biotechnology by genetic improvement, environmental manipulation, purification, packing, compressing, is important for sustainable development. Biogas becomes one of the solutions to meet the energy need in rural areas of developing countries like Bangladesh. Slaughterhouse waste disposal has been a major environmental challenge in all parts of the world. The chemical properties of slaughterhouse wastes are similar to that of municipal sewage; however, the former is highly concentrated wastewater with 45% soluble and 55% suspended organic composition. Blood has a very high Chemical Oxygen Demand (COD) of around 375,000 mg/L and is one of the major dissolved pollutants in slaughterhouse wastewater.

In Bangladesh, there is no organized strategy for the disposal of solid as well as liquid wastes generated in slaughterhouses. The solid slaughterhouse waste is collected and dumped in landfills or open areas while the liquid waste is sent to municipal sewerage systems or water bodies, thus endangering public health as well as terrestrial and aquatic life. Wastewater from slaughterhouses is known to cause an increase in the BOD, COD, total solids, pH, temperature, and turbidity, and may even cause deoxygenation of water bodies.



2. The overall objective of the Assignment

The overall objective of this assignment is to perform an in-depth study on (primary/secondary data) the overall potential of the technology based on the slaughterhouse base biogas generation in Bangladesh, Challenges, and opportunities for public and private sectors especial focus on Municipalities and City Corporations. The selected firm/organization also needs to solely study, organize, negotiate and collect basic data for 20 sites, and based on the outcome, they have to conduct a detailed study on (5) potential sites in Bangladesh. The award winner firm/organization needs to work closely with the TARERAP project secretariat, Sustainable and Renewable Energy Development Authority (SREDA), and consequently suggest the most suitable location for implementation of a pilot project concurrence with suitable design as well as to conduct adequate capacity development and a pilot project implementation.

The ultimate goal is to develop a case study report of lesson learning and achievement from the implementation of this pilot project and disseminate it to target stakeholders for scaling up the concept throughout the country.

3. Eligibility

Bangladeshi consulting firms/NGOs/INGOs are eligible to apply for the assignment.

4. Scope of Services

The Scope of Services includes, but is not limited to, the following. The firm/organization can propose some modifications in the scope of work to meet the objectives of the assignment:

- 4.1 Perform in-depth study on (primary/secondary data) current status and development of slaughterhouse technology base biogas generation in Bangladesh, Challenges, and Opportunities for public and private sector especial focus on Municipalities and City Corporations. Understand and depict overall technology, institutional framework, operational framework, stakeholder mapping along with assessing capacity scenario overall country and entrepreneur level.
- 4.2 Primarily select at least 20 Municipalities/ City corporation sites across Bangladesh. Conduct a pre-feasibility study with the development of a fundamental database along with conducting adequate KII and FGD followed by stakeholder mapping.
- 4.3 Conduct a Detail Feasibility study for five (5) suitable sites.¹

¹ Approval required form TARERAP project secretariat

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