GEF-UNIDO-MNRE Project

Capacity Building and Awareness Generation on Organic Bio-Methanation Projects for Banks, Financial Institutions, Biogas/ CBG Plant Developers & other relevant stakeholders

India has large organic resources such as agricultural residues (crop/straw), animal dung, municipal solid waste (MSW), sugar industry by-products (press mud), sewage/sludge, etc. From these, the Compressed Biogas (CBG) potential is estimated at ~62 million metric tons per annum. In volumetric/energy terms, estimates of raw biogas potential are also very high; for example, one study noted ~74.795 billion m^3/year potential from various substrates such as agricultural residue (≈ 52%) and animal waste (≈29%). In order to tap this potential as a source of cleaner energy, the Government of India has set the target of generating 15 million tons of CBG annually by 2024-25 via the installation of 5000 CBG plants. There are policies and schemes to scale up CBG sector such as –SATAT scheme, National Bioenergy Programme (MNRE), GOBAR-Dhan initiative, CBG Blending Obligation (CBO), Pipeline / CGD Synchronization Scheme, Biomass Aggregation Machinery (BAM) scheme, Market Development Assistance for fermented organic manure (FOM), are well in place. If fully realized, CBG can help reduce dependency on imported LNG/fossil fuels, contribute significantly to GHG emission reduction, improve rural incomes (manure, feedstock sourcing), and help with waste management.

Despite the high potential, policies and schemes in place, this sector is facing several hurdles impeding the pace of scaling up. Main ones are- Feedstock supply and logistics, offtake demand assurance (long term offtake agreement, fuel stations' inability to purchase guaranteed volume, limited infrastructure to distribute CBG etc,). The other most important challenges are about Economics & capital cost- High CAPEX and OPEX, especially for larger plants; uncertainty over revenue from by-product (FOM), selling to pipeline or fuel station, seasonal disruptions, and financing. It is also felt as need-of-the-hour by the sector that there is an urgent need for training and capacity building of the project developers, financial institutions, banks, etc. for appraisal of the project being submitted for loan and any financial assistance.

With this background, the United Nations Industrial Development Organization (UNIDO) and the Ministry of New and Renewable Energy (MNRE), Government of India, are jointly implementing the Global Environment Facility (GEF)-funded project Organic Waste Streams for Industrial Renewable Energy Applications in India. Under this initiative, TERI is organizing Capacity Building and Awareness Generation Workshops on Organic Bio-Methanation and Its Applications for banks and financial institutions in 9 states of India. These workshops will not only benefit participants by equipping them with the knowledge and skills to evaluate CBG

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projects more effectively but will also contribute to advancing India's national vision for the growth of the CBG sector.

The program will also demonstrate the use of the Risk Analysis Checklist for Biogas Projects to identify and mitigate risks. This checklist outlines best practices for designing, implementing, and evaluating anaerobic digestion/biogas projects. Case studies of successfully operating plants will further enhance learning.