Promoting Organic Waste-to-Energy and other Low-Carbon Technologies in SMMEs: Accelerating Biogas Market Development

Update on Project Preparation Activities

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Outline of Presentation

- Background of the Project
- Project Objectives
- Project Structure: Components
- Implementation of the Project Preparation Phase
  - Consultation Process
  - Verification and Design
  - Detailed Project Document Preparation
  - Validation Process
  - Submission to GEF CEO

Background: Policy/Regulatory Context

- DoE – REIPPPP has shown the potential economic and energy security benefits of renewable energy. Developing small-scale project has been a challenge and is being addressed (e.g. FIRST).

- DEA – The implementation of the National Climate Change Response Strategy is moving forward, particularly on the mitigation side. Improving waste management practices is a specific area receiving attention

- DTI – renewable energy, SMMEs and agro processing sectors are receiving support. iPAP has placed great emphasis on Green Industries.

Strategic Partners

- Relevant Government Departments – Some to be appointed to the Steering Committee of the Project
- State Owned Entities (SOEs) – as co-implementers of Project Activities
- Industry (Biogas) Representative Bodies – Safeguard special interests and set agenda

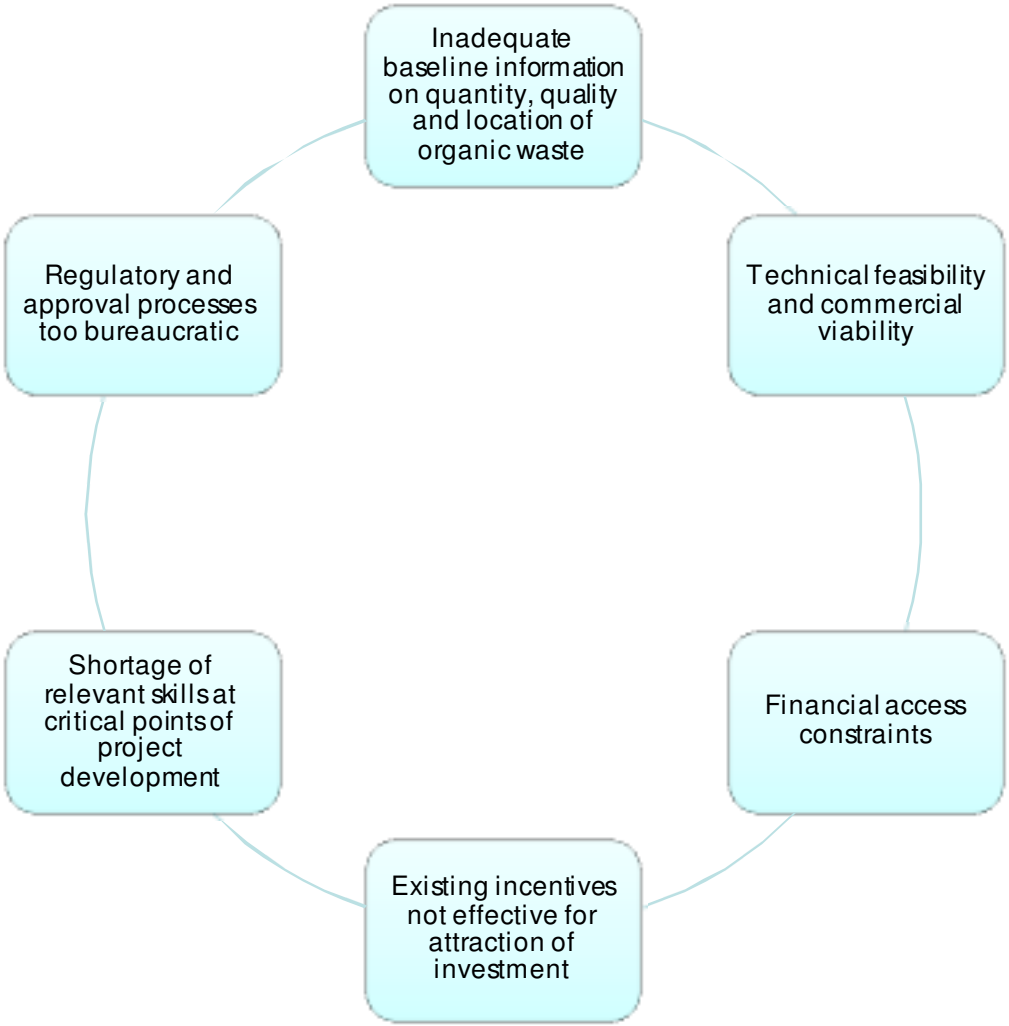
Critical Stakeholders

- SMMEs interested in biogas (Producers, Users, Service -Providers)
- Agro-Processors (with feedstock potential of at least 500kW)
- Farmers (with feedstock potential for at least 100kW)
- Project Developers
- Financial Institutions
- Development Extension Institutions
- Academic Institutions
- Civil Society Organizations

Why use WtE in Agro-Based Industry

- Availability of waste feedstock from agricultural operations – Agro-Waste
- Enterprises are heavily affected by blackouts
- Ideal for enterprises in off-grid/remote areas.
- More storable/ dispatch-able than other RE resources
- High conversion efficiency if used directly (not converted to electricity) – heat/transport
- Enterprises are facing increasing power tariffs
- Widening of revenue streams by the generation of heat and power at the local level
- Increased productivity through technology and skills upgrading that would be associated with adoption of new technologies
- Reduction of environmental challenges with organic waste
- Reduction of costs associated with transporting organic waste to landfill
- Creation of local jobs through waste sorting/collection schemes as well as fertilizer distribution.
- Digestate and the effluent could be used as fertilizer and for irrigation respectively

Interlinked barriers to be addressed by the Project



Project Objective and Qualification Criteria

- Promote Market-Based Adoption of Integrated Biogas Technology in Small and Medium and Micro-Scale Enterprises (SMMEs) in South Africa.
- The focus of this project is enterprises in the Agro processing sector.
- Feedstock: Wet-waste from agro-processing and food-waste
- Enterprise size: 500kW – 3MW
- Stage: Prefeasibility/Feasibility needing some capacity building
- Defining attribute: High prospects for growth
- Location: Rural; Peri-Urban; and/or Urban - (*country representation*)
- Output: Gas for heat; electricity; CNG (*vehicle and industry*)
- Promotion of wide acceptance and use of biogas from organic waste

Project Structure: Components

1. Capacity Building and biogas technology Support System
2. Biogas Market Development and Regulatory
3. Technology Demonstration
4. Scaling up

Project Component 1:Capacity Building and biogas technology Support System

Expected Outcome : Capacity of market players and enablers strengthened and biogas technology support system established

Expected Outputs:

- Build capacities in provinces and private landfill operators to be able to accurately report and categorize waste
- Carry out a detailed assessment and characterization of waste streams from agro-processing enterprises
- Provide training to market players on integrated biogas systems
- Strengthening of biogas and low-carbon technology support center at a selected institution that is already in existence
- The decision support tools and operation manuals will be developed and disseminated through dedicated web portal
- Toolkits, decision support tools and maintenance plan will be developed providing practical guide on how to check for methane leakage
- Regional training workshop (SADC) for biogas enterprises

Project Component 2: Biogas Market Development and Regulatory Framework

Expected Outcome : Market environment strengthened and regulatory framework developed

- Quality standards for plants developed and disseminated.
- Guidelines and regulation supporting the valorisation of digestate and effluent.
- An inter-disciplinary committee reviews current regulations (environment, energy, industry, financing).
- Regulatory framework on access to the grid by small to medium scale biogas projects developed and presented to local authorities

Project Component 3: Technology Demonstration

Expected Outcome : Technical feasibility and commercial viability of waste to energy and other low-carbon technologies

- Support the implementation of demonstration projects to achieve about 3 MW of installed capacity.
- Focus on combined heat and power (CHP) plants and use of sludge and effluent
- Focus on agro-industries (primary and processing) like breweries, poultry, piggery, dairy, abattoirs, beef (feed-lots), wineries and cropping residues
- Support the development of detailed feasibility studies of the 4 demonstration projects
- Depending on the findings of the feasibility study- project can provide some capital grant support.
- Monitor and support (technically) implementation of the demonstration projects
- Develop a best practice manual and disseminate.
- To engage local communities by integrating activities like the gathering and sorting of waste or the selling of fertilizer – South Africa Waste Pickers Association.

Project Component 4: Scaling up

Expected Outcome: Investment to waste to energy and other low carbon technologies promoted

- Develop a national investment strategy for integrated biogas projects in enterprises and other sectors
- Provide technical assistance to potential investors using the already tried and tested business models
- Approach banks and other sources of financing such as the Green Fund, Industrial Development Corporation, Development Bank of Southern Africa as well as private financial providers to discuss financing requirements with project developers
- Create and support a portfolio of at least 25 viable investment projects to sustain interest in waste to energy and other low-carbon technologies.
- Support the design of financial mechanism that will support investments in waste to energy and other low-carbon technologies could imply establishing partnerships between public funds such Green Fund (www.sagreenfund.org.za) and commercial financial services providers
- National biogas investment forum organised regularly

Implementation of the Project Preparation Phase

- Consultation Process
  - Direct stakeholder consultation
  - Consultation Workshop (19 November 2014)
  - Follow-up of matter arising from Workshop
- Verification and Design
  - Detailed engagement with specific stakeholders
  - Synthesis of data into solution design
  - Matching with the project mandate
- Detailed Project Document Preparation
  - Production of first draft (in progress)
  - Internal discussion of the draft
  - Circulation of the draft to selected stakeholders
- Validation Process – Convene a Validation Workshop (May/June 2015)

- Submission to GEF CEO – Submit detailed proposal to GEF CEO (June/July 2015)

THANKS!

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