Promoting organic waste-to-energy and other low-carbon technologies in small and medium and micro-scale enterprises (SMMEs): Accelerating biogas market development

Presentation to the 3rd National Biogas Conference
1 - 3 November 2017, DBSA, Midrand
Nokwazi Moyo, UNIDO
Component 1: Capacity building and Technology Support

Summary of activities planned for Year 1:
1. Detailed assessment and characterization of waste streams from agro-processing SMMEs
2. Identification and contracting of Biogas support centre to be strengthened
3. Development of Biogas guidelines and decision support tools for integrated Biogas systems in agro-processing SMMEs
4. Training of Biogas professionals and technicians
5. Planning and execution of the first of a series of 10 targeted workshops for Biogas market players on Integrated Biogas Systems
Detailed assessment and characterization of waste streams from agro-processing SMMEs:

- The ARC was invited to submit a proposal to perform this activity in conjunction with “Valorization of Digestate” under Component 2;
- ARC had been identified during the Project Preparation Phase and therefore was invited under “waiver”
- Contracting is being finalized
- Duration of the contract is 36 months (was supposed to start July 2017)
Identification and contracting of Biogas support centre to be strengthened

SABIA Administrator/Energy Expert was procured and assumed duty in July. His responsibilities and conditions of service are:

- Set up office for SABIA;
- Formulate operational systems;
- Finalise the SABIA Business Plan;
- Implement a membership drive/campaign;
- Coordinate SABIA calendar events;
- Coordinate WtE Project activities in which SABIA is implicated;
- Organise an accessible repository for biogas knowledge products;
- Attend to SABIA membership queries;
- Attend and represent SABIA in forums as may be required by SABIA Chairman from time to time;
- Man the office at least 2 days per week; and
- Current contract is for 12 months (position to be supported for 3 years).
Development of Biogas guidelines and decision support tools for integrated Biogas systems in agro-processing SMMEs:

- Procurement was done on “Open and competitive tender”;
- Fachverband Biogas Company (Germany) was contracted to do the whole activity;
- Duration of the contract is 10 months;
- The work kicked off on August 3, 2017;
- Two drafts of Biogas Guidebook have already been circulated amongst the core “partners” group;
- First workshop was held yesterday; and
- Second and third workshops are planned for February 2018 and before end of June 2018 targeting national and regional audiences, respectively.

Component 1: Capacity building and Technology Support (cont.)
Training of Technicians and Professional in the construction and maintenance of Domestic Biogas Units:

- University of Venda (UNIVEN) was identified during Project Preparation Phase and then procured under “Waiver”;
- UNIVEN was contracted in April 2017 to provide the services in 5 Limpopo Districts;
- A baseline visit was held in January 2017 and Kick-off meeting in September 2017;
- Duration of contract is April 2017 to February 2020
- Selection of training sites where biogas units will be constructed has started (Workshop of Community Leaders was held)
- Selection of technician trainees is due to start
Summary of contracted projects/service providers for Year 1:

1. Development of the two Biogas Quality Standards for Integrated Biogas Plants
2. Development of Guidelines and Regulations on Valorization of Digestate (covered under Component 1 ARC contract)
3. Investigation of the Biogas licensing process with a view of streamlining it (deferred to Year 2)
   - Could be combined with relevant Demonstration Projects (Component 3); and
   - Investment Strategy (Component 4) needs to verify whether Biogas Licensing bureaucracy is a significantly constraining factor.
4. Development of Regulatory Framework on Access to the Grid by Small and Medium Biogas Projects (also deferred to Year 2 for similar reasons to 3)
Component 2: Biogas Market Development and Regulatory Framework

Development of Biogas Industry Quality and Safety Standards, and training materials

- Procurement was done on “Open competitive tender”
- GCS (Water & Environmental Consultants) was contracted to support the development of two Biogas Industry Standards, i.e., SANS 1753-1 (<0.5GJ) and SANS 1753-2 (>0.5GJ)
- A kick off meeting was held with GCS in August 2017
- Contract duration 31 months (August 2017 to February 2020)
- Key deliverables are:
  - The two standards drafted to SABS specifications;
  - Training material for the two standards developed SETA accreditation level;
  - Training of trainers on the two standards conducted for a critical mass of trainers
### Project Component 3: Technology Demonstration

#### Summary of Contracted Projects

<table>
<thead>
<tr>
<th>Project Developer</th>
<th>Description</th>
<th>Location</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCX Africa</td>
<td>Winelands Pork Abattoir Pyrolysis (500kW)</td>
<td>Bellville, Western Cape</td>
<td>Converted from AD to pyrolysis</td>
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<tr>
<td>CAE</td>
<td>Uilenkraal Dairy wheeling power from CHP AD Plant (300-500kW)</td>
<td>Darling, Western Cape (Bela Bela site dropped)</td>
<td>Legal matter with DST on a different project</td>
</tr>
<tr>
<td>GCX Africa</td>
<td>Elgin Fruit Juices biogas upgrading and conversion of vehicle fleet to dual fuel (500kW)</td>
<td>Grabouw, Western Cape</td>
<td>Seasonal peaks of feedstock supply</td>
</tr>
<tr>
<td>Ibert</td>
<td>Cavalier Abattoir CHP AD Plant (500kW)</td>
<td>Cullinan, Gauteng</td>
<td>Expansion phase</td>
</tr>
<tr>
<td>Renen</td>
<td>Sunshine Seedling Services co-digestion Induced Blanket Reactor (IBR) (110kW)</td>
<td>Howick, KZN</td>
<td>Phased expansion to 1.5MW on 10 locations</td>
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**Project Component 4: Scaling up**

- Intended to start in Year 1
  1. Formulation of Investment Strategy for Integrated Biogas Businesses
  2. Technical assistance for development of 4 more investment project (to achieve at least 6 MW)

- Intended to start in Year 2
  3. Portfolio of at least 25 investment projects compiled and disseminated
  4. Technical support to design financial support
  5. National biogas investment forum organised regularly
Thank You