

CTCN Technical Assistance

Development of a technical and economic feasibility study for anaerobic digestion of the organic fraction of solid waste from households, hotels and markets in Mauritius

Output 7: Development of an Implementation Plan including a Preliminary Proposal for a Public-Private-Partnership

Deliverable 7 (7.1, 7.2, 7.3 and 7.4)

Submitted to:

- Climate Technology Centre and Network
- Department of Environment, Ministry of Environment, Solid Waste Management & Climate Change, Republic of Mauritius
- Solid Waste Management Division, Ministry of Environment, Solid Waste Management & Climate Change, Republic of Mauritius

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Table of Contents

1. Introduction	5
2. Development of an Implementation Plan (Deliverable 7.1)	6
2.1 Overview of Business Model	6
2.2 Activities under the PPP Process	6
2.3 Activities during the Pre-development Period	9
2.4 Activities during the construction stage	9
2.5 Stakeholder Responsibilities	10
2.5.1 Solid Waste Management Division	11
2.5.2 BOT Projects Unit	11
2.5.3 Central Electricity Board	11
2.5.4 Ministry of Agro-Industry and Food Security/FAREI*	11
2.5.5 Small Farmers Welfare Fund*	12
Summary	12
3. Development of a Preliminary Proposal for a PPP (Deliverable 7.2)	14
3.1 Responsibility of the Contractor	14
Responsibility of the Solid Waste Management Division	16
Responsibility of the Central Electricity Board	17
Responsibility of the Compost Purchaser	18
4. Capacity Building on Anaerobic Digestion (Deliverable 7.3)	19
5. Closure Meeting (Deliverable 7.4)	20
6. Summary/Recommendations of Deliverables 7	20
7. References	20

List of Figures

Figure 1 – Implementation plan for the PPP process	8
Figure 2 – Implementation plan for the anaerobic digestion process	13

Acronyms

BOT	Build, Operate and Transfer
DFBOO	Design, Finance, Build, Own and Operate
DFBOT	Design, Finance, Build, Operate and Transfer
FAREI	Food and Agricultural Research and Extension Unit
PPA	Power Purchase Agreement
PPP	Public Private Partnership
RFP	Request For Proposal

Overview of Deliverable 7

Deliverable 7 consists of four components namely:

- An implementation plan
- A draft public-private-partnership (PPP) proposal
- Capacity building material and report
- Closure meeting report

Deliverable 7 comprises an implementation plan including a preliminary proposal for a PPP. The implementation plan consists of an overview of the required activities for implementing the anaerobic digestion project on a PPP basis in Mauritius, including an overview of the business model developed in Output 6 as well as the required investments, timeline for development of project activities and responsibilities of all concerned stakeholders. Deliverable 7 also includes a draft PPP proposal that outlines the general arrangements with the key stakeholders in this project. A capacity-building component is also provided as part of Deliverable 7 to ensure that all the relevant stakeholders in this project are well acquainted with the anaerobic digestion technology. Finally, a closure meeting under Deliverable is scheduled to present the key findings of the feasibility study.

1. Introduction

Deliverable 6 of the Technical Assistance prepared a business model including the cost analysis, the revenue analysis, and a cost-benefit analysis of the project. Based on the business model, an implementation plan is presented in Output 7 that outlines all the activities required as part of the PPP process and the project development stage. This section also includes a summary of the required investments as well as the responsibilities of all the involved stakeholders up to, but excluding, the operation of the biogas plant. As part of Output 7, a draft PPP proposal including all arrangements with relevant stakeholders is presented while a capacity-building component and a closure meeting report with all the key stakeholders are also presented in Output 7.

2. Development of an Implementation Plan (Deliverable 7.1)

The Implementation Plan provides an overview of the business model presented in Output 6 and list all the activities required as part of the PPP process up to award of Contract and during the project development phases (pre-development period and construction and commissioning stages).

2.1 Overview of Business Model

Based on the business model developed in Output 6, the implementation of anaerobic digestion in Mauritius is being proposed as a PPP under the Design, Finance, Build, Own and Operate (DFBOO) mode of procurement. This mode of procurement is being privileged for the following reasons:

- Construction of a biogas plant has high upfront investment costs (CAPEX) which may represent a financial burden for the Mauritian Government in view of other projects in priority areas;
- The Ministry currently does not have any state land at its disposal and choosing the DFBOO instead of the Design, Finance, Build, Operate and Transfer (DFBOT) implies that the private promoter will come with its own land and will retain the facility at the end of the concession period (20 years as determined in Output 6); and
- The Ministry will only have to pay the tipping fee of MUR 1000 for each tonne of organic wastes processed by the biogas plant, as determined under Output 6. This will be more financially sustainable as opposed to the high investment costs.
- Exploration of Subsidy to meet the capital costs could be considered as articulated in Output 6.

2.2 Activities under the PPP Process

For any projects being implemented under the PPP route, the BOT Projects Unit under the Policy Procurement Office in Mauritius and mandated by the BOT Projects Act 2016 has devised a 9-step process, as summarised below (Modified from: BOT Projects Unit, 2016):

- a) Identification of the anaerobic digestion project as a PPP project by the Contracting Authority (i.e., the Solid Waste Management Division).
- b) Registration of the anaerobic digestion project as a PPP project with the BOT Projects Unit.

- c) Setting-up of a project management team at the level of the Contracting Authority (i.e., the Solid Waste Management Division) to manage the anaerobic digestion project from conception to closure (up to the end of the concession period).
- d) Structuring of the anaerobic digestion project through the recruitment of a Transaction Advisor for the commissioning of a feasibility study to assess the commercial viability of the project to be implemented under the PPP route.
- e) Seeking the approval of Cabinet to implement the anaerobic digestion project under the PPP route.
- f) Preparation and launching of the request for proposal document to invite potential bidders to set-up and operate the biogas plant (**Note:** The Transaction Advisor can also be tasked with preparation of the request for proposal document).
- g) Evaluation of the bids received (including negotiation with preferred bidder (with assistance of Transaction Advisor) on minimum waste guaranteed tonnage, conditions of Power Purchase Agreement (PPA) with the Central Electricity Board, conditions of compost sales agreement (if any) with the compost purchaser (Ministry of Agro-Industry and Food Security, the Food and Agricultural Research and Extension Unit (FAREI) or the Small Farmers Welfare Fund).
- h) Seeking the approval of Cabinet prior to award of the Contract; and
- i) Awarding of Contract.

Following the feasibility study being commissioned under this Technical Assistance, the Solid Waste Management Division will be required to undertake each of the 9 aforementioned activities as specified by the BOT Projects Unit, as per the Gantt Chart in Figure 1.

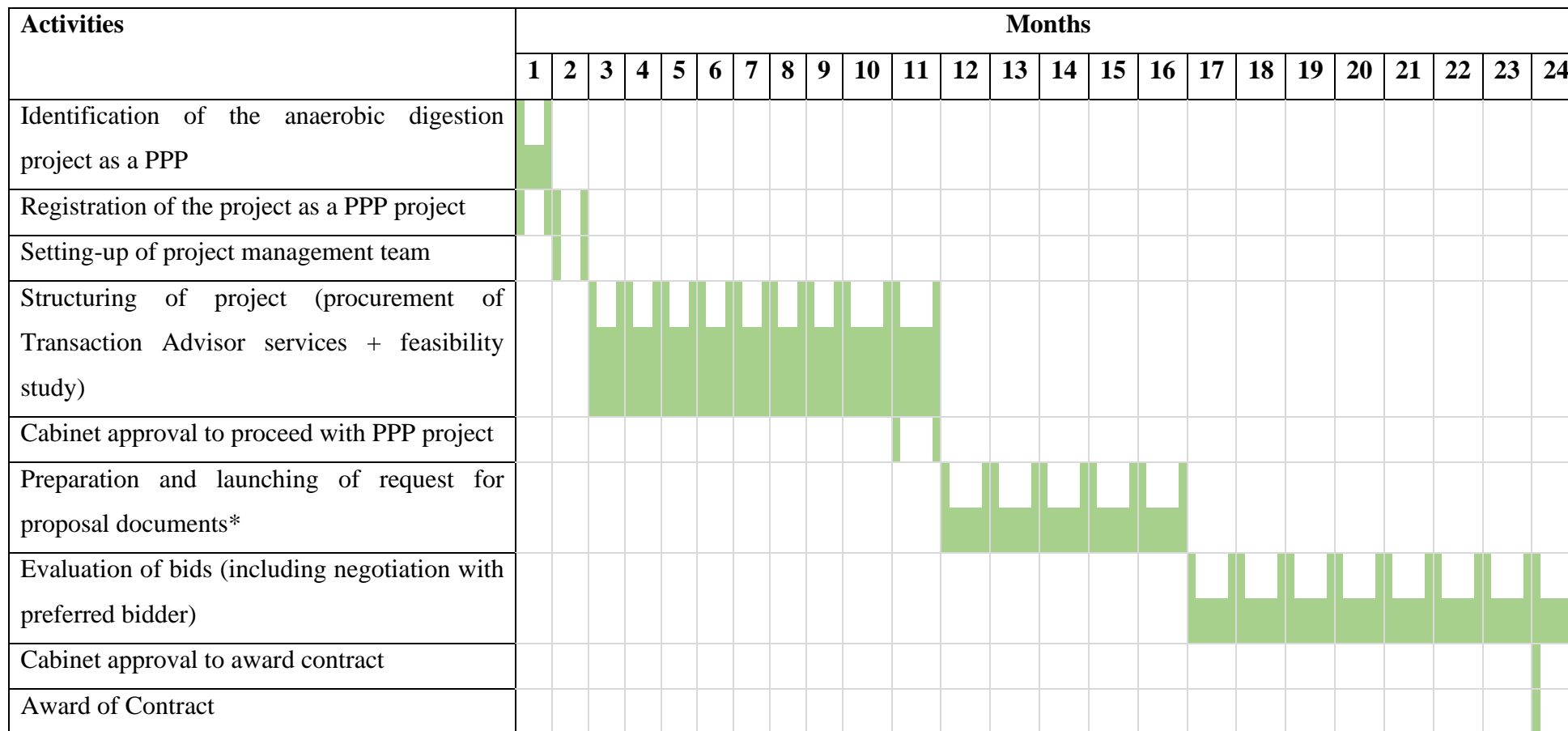


Figure 1– Implementation plan for the PPP process

* This assumes that no pre-qualification exercise will be carried out. If the Solid Waste Management Division decides to carry out a pre-qualification exercise, a minimum of 6 months must be added to the implementation plan.

2.3 Activities during the Pre-development Period

Following the award of the Contract, the preferred bidder will be required to carry out the following studies and obtain the relevant permits/licenses as part of the pre-development period:

- Geotechnical investigations of the proposed site.
- Environmental Impact Assessment License or Preliminary Environment Report, as applicable, from the Department of Environment of the Ministry of Environment, Solid Waste Management and Climate Change.
- Building and Land Use Permit from the relevant Local Authority,
- Signature of PPA with the Central Electricity Board.
- Signature of Compost Sales Agreement with the compost purchaser (Ministry of Agro-Industry and Food Security, FAREI or the Small Farmers Welfare Fund, as and if applicable).
- Fire Clearance from the Mauritius Fire and Rescue Service.

The processing of the applications for obtaining the permits/licenses may take from 6 months to 1 year depending on the completeness of the applications.

During the pre-development period, the preferred bidder will also be required to design the biogas plant with all the unit operations therein and pilot test the model with organic wastes generated in Mauritius to ensure that it will be properly operational and meet the expected output requirements. The design may take up to 6 months while the pilot testing may take another 6 months. The design can be carried out concurrently with the processing of licenses/permits.

2.4 Activities during the construction stage

Once all the required permits/licenses have been obtained and the design and pilot testing have been completed, the preferred Bidder will then start with the construction of the biogas plant. The main activities comprising the construction stage of the biogas facility are as follows (Samer, 2012):

- **Facility layout, dimensions marking and excavation works**

Once the geotechnical investigations of the site have been carried out and the site selection has been finalised, it is important to have a layout of the biogas facility with all the required unit operations from waste reception to electricity and compost production. Other infrastructures

such as access roads, parking areas, fencing and entrance need to be mapped on the layout. Following the planned layout, the dimensions need to be marked and excavation works can then start. The timeframe associated with these activities approximates 3 months (but eventually depend on the topography of the site). The associated costs with the construction-civils work, installation & commissioning are estimated at 688 088 USD (as determined in Output 6).

- **Installation of the different units of the biogas plant**

Following the excavation works, the different units of the biogas plant can either be installed or constructed. Prior to this, all required utilities need to be in place (i.e., water, electricity). For substrate preparation tanks or storage tanks, these can be prefabricated steel tanks which require only installation. As for the digester, this can be constructed from either concrete or steel and depending on the choice, the timeframe will vary accordingly. All the other unit operations of the biogas plant including the shredder, conveyor belts, gas holder/storage tanks and engines, amongst others, are ordered based on the required technical specifications and installed. The composting area will, however, must be constructed and this includes a platform and a covered shed. The total investment costs of the biogas plant, including the technology installation and access roads and site fencing, as worked out in Output 6, are \$12 903 781 (USD). The timeframe for construction of the biogas plant varies on the type of technology chosen and whether prefabricated units will be installed, or some components will be constructed on site. On average, the timeframe for construction of the biogas plant is around 12 - 24 months.

- **Commissioning of the biogas plant**

Once all the units of the biogas plant have been installed/constructed and all the softwares installed (e.g., SCADA systems), the commissioning period of the biogas plant shall be up to a period of 12 months. During this period, the plant will be tested, all units shall be verified for proper operation/functioning and all the parameters of the anaerobic digestion process will be optimised prior to full-scale operation.

The total timeframe for construction and commissioning of the biogas plant including the excavation works is estimated at 21 months.

2.5 Stakeholder Responsibilities

The stakeholder responsibilities outlined in this section exclude the operational and maintenance phase of the project and are summarised as follows:

2.5.1 Solid Waste Management Division

The Solid Waste Management Division is the main stakeholder in the implementation of the anaerobic digestion project in Mauritius. The responsibilities of the Solid Waste Management Division are summarised as follows:

- Identify the anaerobic digestion project as a PPP project and submit the required documentations to the BOT projects unit for registration of the project.
- Set-up a project management team to oversee the implementation of the project.
- Recruit a Transaction Advisor with the assistance of the BOT Projects Unit for carrying out a commercial feasibility study and for the preparation of the request for proposal documents for the setting-up and operation of the biogas plant.
- Launch the request for proposal documents through the Central Procurement Board.
- Participate in the evaluation of the bids.
- Negotiate with the Preferred Bidder and agree upon the sharing of risks.
- Award of the Contract and signature of the BOT agreement; and
- Supervise the construction and commissioning of the biogas plant or alternatively recruit a Consultancy firm for supervision of the construction Works.

2.5.2 BOT Projects Unit

The role of the BOT Projects Unit is to register the project as a PPP project and assist the Solid Waste Management Division in structuring the anaerobic digestion project as a PPP project.

2.5.3 Central Electricity Board

The responsibility of the Central Electricity Board is to purchase electricity from the Preferred Bidder/operator of the biogas plant through a PPA. The PPA shall be prepared by the Central Electricity Board and all conditions therein shall be discussed with the Preferred Bidder during the negotiation stage prior to award of the Contract. The PPA shall be valid for a specified period of time following which, same shall be renewed if agreeable by the two Parties and upon such terms and conditions that may prevail at the time of renewal.

2.5.4 Ministry of Agro-Industry and Food Security/FAREI*

The responsibility of the Ministry of Agro-Industry and Food Security or FAREI is to purchase compost from the Preferred Bidder/operator of the biogas plant through a compost sales

agreement. The compost sales agreement shall be prepared jointly by the Ministry of Agro-Industry and Food Security or FAREI and the biogas plant operator and all conditions therein shall be discussed and agreed upon. The compost sales agreement shall be valid for a specified period of time following which, same shall be renewed if agreeable by the two Parties and upon such terms and conditions that may prevail at the time of renewal.

2.5.5 Small Farmers Welfare Fund*

The responsibility of the Small Farmers Welfare Fund is to purchase compost from the Preferred Bidder/operator of the biogas plant through a compost sales agreement. The compost sales agreement shall be prepared jointly by the Small Farmers Welfare Fund and the biogas plant operator and all conditions therein shall be discussed and agreed upon. The compost sales agreement shall be valid for a specified period of time following which, same shall be renewed if agreeable by the two Parties and upon such terms and conditions that may prevail at the time of renewal.

** This is conditional. Should any of these Stakeholders decide not to purchase the compost, they cannot be obliged to do so.*

Summary

A summary of the different activities from the PPP process up to the commissioning of the biogas plant is presented in Figure 2. Once the biogas plant has been commissioned, the plant operator will be required to operate the biogas plant for the concession period specified in the BOT agreement.

3. Development of a Preliminary Proposal for a PPP (Deliverable 7.2)

The purpose of Deliverable 7.2 is not to prepare a request for proposal (RFP) document for the Contracting Authority (Solid Waste Management Division) as this is not within the scope of this study. The preparation of the RFP document is a separate intensive work that can either be carried out by the Solid Waste Management Division or enlisted to a Transaction Advisor as part of another Consultancy study. Notwithstanding the above, the Solid Waste Management Division may wish to carry out a pre-qualification exercise prior to launching a RFP document. The purpose of Deliverable 7.2 is to therefore provide a preliminary proposal for a PPP, outlining the general arrangements with the relevant stakeholders, including the Preferred Bidder (henceforth referred as the Contractor). The aim of such arrangements is to ensure risk sharing between the public sector and the private sector in the PPP which will eventually attract potential promoters to invest in the project.

3.1 Responsibility of the Contractor

The Contractor will have the major responsibilities in the setting-up and operation of the biogas plant. The obligations of the Contractor, as may be incorporated in a future RFP document, will be:

- To sign the BOT agreement with Solid Waste Management Division that shall also incorporate the terms and conditions of a Waste Supply Agreement.
- To obtain all relevant clearances/permits during the agreed pre-development period.
- To be liable to a penalty of an amount decided by Solid Waste Management* for every day beyond the agreed pre-development period unless the Contractor can justify the delays.
- To design a biogas plant of capacity 30,000 tonnes/annum based on a continuous single-stage high solid system for digesting food wastes and yard wastes. The design shall comprise, *inter-alia*, detailed mechanical drawings of the unit operations of the biogas plant with detailed process flow diagrams and process instrumentation diagrams.
- To submit the detailed design to the Solid Waste Management Division for approval.
- To pilot-test the approved model of the biogas plant with food wastes and yard wastes collected locally for a period of 6 months and make any adjustments therein to optimise the biogas production rate.
- To construct the biogas plant and install all the required equipment and software as per the detailed design at its own costs.
- To be liable to a penalty of an amount decided by Solid Waste Management* for every day beyond the agreed construction period unless the Contractor can justify the delays.

- To commission the biogas plant for a period of up to 6 months to verify that all the unit operations are fully functioning, and all parameters of the anaerobic digestion process have been optimised.
- To operate the biogas plant for the concession period of 20 years.
- To accept a minimum of 2,500 tonnes/month of solid organic wastes (comprising food wastes and yard wastes) as stipulated in the Waste Supply Agreement.
- To accept solid organic wastes comprising only food wastes and yard wastes at the biogas plant with a maximum contamination of 5% (on a weight basis).
- To compensate the Solid Waste Management Division for every tonne of solid organic waste that it fails to accept at the biogas plant. The compensation rate shall be the same as the tipping fee quoted by the Preferred Bidder in its proposal or as otherwise negotiated.
- To prevent waste stacking at the biogas plant or be liable to a fine of an amount decided by Solid Waste Management*.
- To sign an ESPA with the Central Electricity Board on such terms and conditions as agreed during both Parties during the negotiation stage.
- To connect the transmission lines from the transformer unit of the biogas plant to the 66/22 kV sub-station of the Central Electricity Board at its own costs.
- To sell a minimum of 47271 kWh/day of electricity to the Central Electricity Board at the price agreed in the ESPA.
- To compensate the Central Electricity Board for every kWh of electricity that it fails to supply to the grid network at the same selling price of electricity as quoted by the Preferred Bidder in its bid or as fixed in the RFP document or as otherwise negotiated.
- To sign a compost sales agreement with the compost purchaser on such terms and conditions as agreed during both Parties during the negotiation stage.
- To produce compost that meet MS 164:2010 in terms of quality.
- To sell a minimum amount of 3340 tonnes/day of compost to the compost purchaser, as agreed in the compost sales agreement.
- To compensate the Compost Purchaser for every tonne of compost that it fails to supply to the Compost Purchaser at the same selling price for compost as quoted by the Preferred Bidder in its bid or as fixed in the RFP or as otherwise negotiated.
- To allow officers of the Solid Waste Management Division or any other Authority access to the biogas plant.
- To maintain the biogas plant and the landscaping.
- To operate within the applicable laws of Mauritius.

- To meet all national environmental standards.
- To ensure the health and safety of its personnel.
- To ensure that its personnel is constantly trained in connection with operating and maintaining the biogas plant as well as with regards to health and safety aspects; and
- To inform the Solid Waste Management Division and any other relevant Authorities in case of any emergency situation.

**Solid Waste Management Division to decide on the penalty during negotiation stage with Preferred Bidder.*

Responsibility of the Solid Waste Management Division

The obligations of the Solid Waste Management Division as the Contracting Authority comprise the supply of solid organic wastes to the biogas plant based on a minimum waste agreed tonnage (2,500 tonnes/months: equivalent to 30,000 tonnes/annum or 100 tonnes/day for 300 days operation per year) of a certain quality (maximum 5% contamination) at an agreed tipping fee as quoted by the Preferred Bidder in its bid or otherwise negotiated. The obligations of the Solid Waste Management Division, as may be incorporated in a future RFP document, will be:

- To issue a letter of comfort/intent to the Preferred Bidder allowing the latter to finalise land acquisition or lease issues and also to reach financial close with regards to loans.
- To sign the BOT agreement with the Preferred Bidder that shall also incorporate the terms and conditions of a Waste Supply Agreement.
- To assist the Contractor in obtaining the relevant clearances/permits from the responsible Authorities.
- To approve the detailed design of the biogas plant as made by the Contractor.
- To supply to the Contractor of the biogas plant the required amount of food wastes and yard wastes for the pilot-testing for a period of 6 months.
- To supply to the Contractor of the biogas plant a minimum of 2,500 tonnes/month of solid organic wastes (comprising food wastes and yard wastes) as stipulated in the Waste Supply Agreement.
- To deliver, through the collaboration of the responsible Local Authorities, the minimum agreed waste tonnage of solid organic wastes to the biogas plant at its own costs on such days and at such times as agreed between the Solid Waste Management Division and the Contractor of the biogas plant.

- To supply solid organic wastes comprising only food wastes and yard wastes to the biogas plant with a maximum contamination of 5% (on a weight basis);
- To pay the Contractor of the biogas facility a tipping fee as quoted by the Preferred Bidder in its proposal or otherwise negotiated.
- To compensate the Contractor of the biogas plant for every tonnage of wastes not supplied to the biogas plant below the minimum waste agreed tonnage of 2,500 tonnes/month. The compensation rate shall be the same as the tipping fee quoted by the Preferred Bidder in its proposal or as otherwise negotiated.
- To compensate the Contractor of the biogas plant for any contamination of the wastes supplied in excess of 5% (on a weight basis). The compensation rate shall be the same as the tipping fee quoted by the Preferred Bidder in its proposal or as otherwise negotiated and shall be calculated based on the tonnage of contaminants supplied to the biogas plant.
- To transport, through collaboration with the responsible Local Authority, any contaminated wastes in excess of 5% (on a weight basis) to the nearest transfer station or the landfill at their own costs.
- To collaborate with the Ministry of Agro-Industry and Food Security or FAREI to adopt policies in view to promoting the use of compost in Mauritius.
- Any excess in solid organic wastes tonnage delivered to the biogas plant above the minimum agreed tonnage for a particular month shall be carried forward to the succeeding month and shall be included in the determination of the waste tonnage supplied to the biogas facility for the succeeding month.

Responsibility of the Central Electricity Board

The main obligation of the Central Electricity Board is to purchase electricity from the biogas plant at an agreed price as quoted by the Preferred Bidder in its proposal or otherwise negotiated or as fixed in the RFP document. The obligations of the Central Electricity Board, as may be incorporated in a future RFP document, will be:

- To sign an ESPA with the Contractor of the biogas plant on such terms and conditions as agreed during both Parties during the negotiation stage.
- To act as a facilitator to the Contractor of the biogas plant in terms of procedures for being an Independent Power Producer and connecting to the grid network.
- To grant the Contractor of the biogas plant access to a 66/22 kV sub-station for connecting the transmission lines;

- To purchase a minimum of 47271 kWh/day of electricity from the Contractor of the biogas plant supplied to its sub-station 66/22 kV, as agreed in the ESPA.
- To pay the Contractor of the biogas plant the price quoted by the Preferred Bidder in its proposal or as otherwise negotiated or as fixed in the RFP document for every kWh of electricity purchased; and
- To compensate the Contractor of the biogas facility for every kWh of electricity not purchased below the minimum agreed units of electricity to be purchased on a daily basis. The compensation rate shall be the same as the quoted price for every unit of electricity purchased or as fixed in the RFP or as otherwise negotiated.

Responsibility of the Compost Purchaser

The main obligation of the Compost Purchaser (Ministry of Agro-Industry and Food Security, FAREI or the Small Farmers Welfare Fund or other entity) is to purchase compost produced from digestate at an agreed price as quoted by the Preferred Bidder in its proposal or otherwise negotiated or as fixed in the RFP document. The obligations of the Compost Purchaser, as may be incorporated in a future RFP document, will be:

- To sign a compost sales agreement with the Contractor of the biogas plant on such terms and conditions as agreed during both Parties during the negotiation stage
- To purchase a minimum amount of 3440 tonnes/day of compost from the Contractor of the biogas plant, as agreed in the compost sales agreement.
- To collect the compost purchased at its own costs.
- To pay the Contractor of the biogas plant the price quoted by the Preferred Bidder in its proposal or as otherwise negotiated or as fixed in the RFP document for every tonne of compost purchased; and
- To compensate the Contractor of the biogas facility for every tonne of compost not purchased below the minimum agreed tonnage of compost to be purchased on a daily basis. The compensation rate shall be the same as the quoted price for every tonne of compost purchased or as fixed in the RFP document or as otherwise negotiated.

4. Capacity Building on Anaerobic Digestion (Deliverable 7.3)

28 April 2022

A capacity building workshop, with staff primarily from the Solid Waste Division, was held at the Caudan Arts Centre on 28 April 2022. The offices of the Ministry of Environment and the Solid Waste Division were represented by Mr. Oh-Seng, Dr. Zumar Bundhoo among others. There were four addresses during the opening remarks namely by Mr Beerachee, Director of Solid Waste Management Division, Mr Oh-Seng (Office of the NDE)- Ministry of Environment, Solid Waste Management and Climate Change, Mr Valentin Rudloff (CTCN) and Dr Oscar Mokotedi from CSIR. During the capacity building, there were four presentations by the project team namely Dr Dinesh Surroop (UoM), and Drs. Oscar Mokotedi, Jeffrey Baloyi and Shingirirai Mutanga (CSIR). Vibrant discussions focused on Outputs 2, 3, 4, 5, 6 and 7, wherein the Transaction Advisor (Mr. Rubinder Singer, from the Kukuza Project Development Company), and Mr Keesoony from FAREI and staff of Solid Waste Management Division, were some of the prominent contributors during the discussions. Effective communication with the Solid Waste Management Division and the Office of the NDE eased the relevance of the presentations and allowed the workshop to focus on critical issues at hand. Hence the event was more productive and enabled the participants to raise pertinent issues/questions to the representatives of the project team. There were two key conclusions:

- The Office of the NDE supports the ambitions of the Solid Waste Management Division and informs that the latter will not have any objection on the outputs as long as it meets the expectation of Solid Waste Management Division. It should be noted that the former was quite proactive in engaging the project team to deliver on the requests as stipulated in the Technical Assistance (TA) request, and even went beyond that role by continuously updating the project team about related events in Mauritius, which made the CTCN's TA request more meaningful to Mauritius.
- The list/photos of participants to the workshop is annexed to this report, including a reflection from the Solid Management Division on the impact of the CTCN's intervention. Overall, positive messages came through from all participants, and one of the next immediate steps is to explore the possibility of implementing the project with perhaps the support of the Transaction Advisor.
- The project team presented various scenarios to illustrate the sustainability of the use of solid organic waste fraction for electricity and compost generation (see annexed presentations). The decision now rests with the Government of Mauritius to take the work forward, in consultation with the CTCN.
- The economic analysis shows that the use of organic fraction of municipal solid waste for electricity production through anaerobic digestion is indeed feasible and has a reasonable payback period. The payback period can be further improved with a good negotiation on the selling price of electricity with the Central Electricity Board

- The project has potential additional spinoffs which includes among others, social, environmental, political and technological all which are critical for achieving Sustainable Development Goals (SDGs) in particular SDG 7, 8, 9, 11 and 13.

5. Closure Meeting (Deliverable 7.4)

Shortly after the Capacity Building Workshop, a meeting was held with representatives of the Office of the NDE (Mr Oh-Seng) and Solid Waste Management Division (Dr Zumar Bundhoo and Dr Pooja Rago-Shamachurn). Subsequent steps, based on the recommendations for each output from the current CTCN’s intervention will be taken forward by the NDE to the CTCN. The NDE expressed total support to the Solid Waste Management Division, based on their role and inputs in refining the deliverables/outputs to the current CTCN’s intervention on the:

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| <ul style="list-style-type: none"> • <i>Goal: Feasibility study of anaerobic digestion of the organic fraction of solid wastes in Mauritius</i> |
| <ul style="list-style-type: none"> • <i>Outcome: Mauritius has a technical and financial feasibility study at hand</i> |

The team appointed by the CTCN has delivered on the Technical Assistance.

6. Summary/Recommendations of Deliverables 7

Deliverable/Output 7 provided an implementation plan of the project with different activities and responsibilities of the relevant stakeholders. It also provided a draft PPP proposal which can be used as base if the project will be implemented on PPP basis. The capacity building component was one of the main outputs of this deliverable as it was important to validate the findings of the feasibility study and at the same time, it enabled the different stakeholders to develop their capacity on the anaerobic digestion process. Finally, the deliverable includes the closure meeting report wherein the Nationally Designated Entity and the Solid Waste Management Division (Client) showed their appreciation for this Technical Assistance.

7. References

- BOT Projects Unit, 2016. BOT Projects Guidance Manual. Procurement Policy Office.
- Samer, M., 2012. Biogas Plant Constructions. In: Biogas, Chapter 17, pp. 343-368. InTech Open.

Acknowledgements

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- Furthermore, the project team benefitted enormously from the technical expertise of Dr Bundhoo Zumar, Mr Beerachee, Mr Dookee, Mr Oh-Seng and Prof Surroop, without whom, progress would have been slowed down quite significantly (despite the impact of the COVID-19 pandemic and restrictions/regulations).
- And finally, the bigger CSIR team behind all the 7 Outputs - their roles and inputs improved the scope and potential of this 'small' project way beyond what was expected. Hence, we look forward to more engagements in areas such as land use and land cover change, circular economy, waste-to-energy, etc.

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