



Annex 1: Terms of Reference

Biogas Installations at Rural Educational Institutions in VANUATU

Assignment Information

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| Assignment Title: | Installation of Biogas Systems at Rural Educational Institutions in Vanuatu |
| Project: | NDC Hub (GIZ) |
| Post Level: | International Consultant |
| Contract Type: | Individual Contractor or Consultancy Firm |
| Duty Station: | Vanuatu-based (or overseas with a local based consultant) |
| Expected Place of Travel: | NA |
| Contract Duration: | 10 months |

Project Description:

The Regional Pacific NDC Hub (NDC Hub) was launched in 2017 and officially established in 2018, as an initiative emerging from Pacific Island Leaders at the Climate Action Pacific Partnership (CAPP) in 2017 and Fiji's Presidency of COP23. The Hub, in partnership with SPREP and other ONE CROP+ agencies, aims to provide a regional coordinated mechanism to support countries in meeting their climate related commitments under the Paris Agreement as part of their Nationally Determined Contributions (NDCs). Assistance can be provided and tailor-made to suit NDC Hub members so they can produce relevant national policies and measures that action those commitments. In taking a demand-driven approach, the NDC Hub receives requests from Pacific Island Countries and Territories (PICTs) outlining their specific needs for support in the NDC Process and implementation so the proper technical expertise can be provided accordingly.

Vanuatu's NDC pledge aims to transition from diesel-generated electricity to about 100% renewable energy for electricity production in their electricity sector by 2030. This will greatly reduce greenhouse gas emissions from Vanuatu's electricity sector as opposed to a business-as-usual (BAU) scenario. There is a number of planned mitigation interventions, provided funding is available, which can boost Vanuatu's renewable electricity production including additional electricity generated from sources such as the sun (solar), wind and geothermal. Not only is Vanuatu encouraging grid-connected renewable energy projects, but it has also initiated some off-grid projects which have proven very useful for some of their rural communities. One of these initiatives is the utilization of organic waste (green waste and food scraps) to generate biogas via anaerobic digestion. Vanuatu has already seen the multitude of benefits from the biogas systems already installed at two of their rural educational institutions – Onesua Presbyterian College in North Efate and Vanuatu Agriculture College. Biogas systems offer an excellent waste management option, especially



for green waste, animal waste and food scraps where methanogenic bacteria break down the waste to yield methane which can be used as cooking gas or electricity-generation. The overflow from the system can be diluted and used as fertilizer which is completely organic and has the ability to revitalize the soil with rich nutrients for better crop yields. By encouraging the use of biogas technology, the reliance on biomass (fuelwood and firewood) for cooking can be reduced along with GHG emissions from burning biomass. Furthermore, this will mean less exposure of traditional biomass users, mainly women and children, to the harmful effects of smoke inhalation once they switch to biogas for cooking. In terms of positive social impacts, women and children will have more time for other productive activities when they are not out collecting firewood for cooking.

Scope of Work:

The consultant (or consultancy firm) shall:

- 1) Work closely with the Department of Climate Change under the Vanuatu Ministry of Climate Change to collect the relevant data for the following rural educational institutions, in order to determine their feasibility and sustainability:
 - a. Saint Patrick
 - b. Rensarie
 - c. Matevulu
 - d. Tafea College;
- 2) Attend the pre-bid site assessment visit scheduled for 15th January 2021 at the Vanuatu Ministry of Climate Change at 10:00am and ask for Mr. Nelson Kalo or Mr. Ian Iercet; so that more information can be obtained to assist with designing suitable systems for each of the sites;
- 3) Perform a final site assessment, once they are awarded with this contract, and present detailed biogas system designs for each of the “feasible” sites and all the related costs (feasibility studies);
- 4) Prepare a workplan and procurement plan;
- 5) Procure all the materials for the biogas systems;
- 6) Carry out the installation works for the selected biogas systems;
- 7) Perform trainings for the rural educational institutions so they can maintain and sustain the systems effectively;
- 8) Commission and trial run the biogas systems;
- 9) Prepare and submit Operational and Maintenance Manuals for each of the biogas systems;
- 10) Hand over the fully functional biogas system to the government and the respective rural educational institutions.

Expected Outcomes and Deliverables:

Based on the scope of works outlined above, the consultant will deliver the following outputs:

Output 1: Inception Report

Based on the information obtained from the Department of Climate Change under the Vanuatu Ministry of Climate Change and the data collected during the pre-bid site assessment, the consultant(s) should present description of each site and initial designs earmarked for each site with clarifications on why certain systems were chosen for the sites. The consultant(s) should prepare a workplan outlining possible dates for:

- a. “final” assessment of the sites;



- b. community consultations prior to system installation in order to present the biogas system design and to encourage them to take ownership of the biogas systems
- c. commencement and completion of the biogas systems' installation;
- d. community trainings on system operation and maintenance.

Output 2: Feasibility Studies

The consultant(s) should carry out a "final" assessment of the selected sites to account for any changes in the data previously collected. They should then determine and prioritize the sites most suitable and more sustainable for the installation of biogas systems at the four schools listed above. This feasibility report shall include the description and photos of each of the sites, final detailed biogas system design for each of the sites and a list of all the materials to be procured for each site. This feasibility report should be accompanied by a procurement plan based on the materials required for the "final" biogas system designs. Should there have been any changes to the date of the workplan, the newly amended workplan is to be included too.

Output 3: Installation of Biogas Systems

The consultant(s) shall procure all biogas system components for each site and install these systems at the selected rural educational institutions. A "certificate of completion" is to be issued by the contractor(s) to the Department of Climate Change under the Ministry of Climate Change. The Ministry officials shall then inspect and commission the trial run of the system and their approval is granted via signing this certificate of completion. Upon signing by both parties, final payment per site can then be released.

Output 4: Consultations and Training Report

The consultant(s) shall carry out all the pre-installation consultations with the selected rural educational communities where the biogas systems will be installed. The consultant(s) shall also complete the training of all the beneficiaries at the selected rural educational institutions in Vanuatu. A report on both the consultations and trainings, including photos of the various communities, is to be submitted. Consulting communities prior to any project is vital in its sustainability once the community buys in to it. Training is equally important when sharing new renewable energy technologies with our rural communities so they can understand the different components and are therefore able to take ownership of these different initiatives for their benefit.

Output 5: Operation and Maintenance Manuals

The consultant(s) shall complete all the "Operation and Maintenance" Manuals per site, including photos and step by step instructions on how to troubleshoot should there be a problem. Translation into the local dialect will also be ideal.

Institutional Arrangement:

The consultant(s) will be under the supervision of the Climate Change Resilience Programme (Pacific NDC Hub) under the Director of Climate Change and the Vanuatu Ministry of Climate Change (VMCC).

Reports and documentation will be shared with CCR Director, PCCC Manager, all advisers, the Director of Climate Change and VMCC in a timely manner.

Duty Station:

Vanuatu-based or overseas (with local team member).

Deliverables/Timeline:



All deliverables must be completed within the number of days set out in the table below within ten months from the effective date (signing) of the contract.

| No. | Deliverables | Estimated Duration to Complete | Review and Approvals Required |
|--------------|---------------------------------|--------------------------------|--------------------------------------------------------------------------------|
| 1 | Inception Report | 1 month | Vanuatu Ministry of Climate Change (Department of Climate Change), CCR-NDC Hub |
| 2 | Feasibility Studies | 2 months | Vanuatu Ministry of Climate Change (Department of Climate Change), CCR-NDC Hub |
| 3 | Installation of Biogas Systems | 5 months | Vanuatu Ministry of Climate Change (Department of Climate Change), CCR-NDC Hub |
| 4 | Consultations & Training Report | 1 month | Vanuatu Ministry of Climate Change (Department of Climate Change), CCR-NDC Hub |
| 5 | Operation & Maintenance Manuals | 1 month | Vanuatu Ministry of Climate Change (Department of Climate Change), CCR-NDC Hub |
| Total | | 10 months | |

Evaluation criteria & Scoring Method:

A proposal will be rejected if it fails to achieve 70% or more in the technical criteria and its accompanying financial proposal shall not be evaluated.

i. Technical Score – 70 %

Detailed technical evaluation criteria and possible scores for each are as follows:

| Major Criteria | Details & sub-criteria | Maximum % |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| CVs & Qualification | <p>At least one consultant to have:</p> <ul style="list-style-type: none"> • Minimum qualification of a Master's degree (or Bachelors with minimum 10 years of experience) in the fields of Renewable Energy, Biogas Construction, Biomass, Environmental Engineering, Climate Change, Environmental Management or any other related field; • minimum of 8 years' experience in biogas installation in Vanuatu or other similar Pacific countries; • minimum of 5 years working in NDC & low-carbon development areas; • good understanding of biomass uses in Vanuatu or other similar Pacific countries; | 10 |



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| | <ul style="list-style-type: none"> • good understanding of environmental and climate change related issues in Vanuatu or other similar Pacific countries. | |
| General expertise in similar assignments | <ul style="list-style-type: none"> • Demonstrated experience in designing, procurement, installation and commissioning of biogas systems in Vanuatu or other similar Pacific countries. At least 3 biogas projects with contact information of the recipients for due diligence process. • Demonstrated experience in performing reliable feasibility studies for biogas or any other renewable energy technology. At least 2 feasibility studies; • Demonstrated experience in working with communities in Vanuatu or other similar Pacific island communities. At least 2 village / school communities; • Familiarity, knowledge & experience with the energy sector in Vanuatu and other similar countries in the Pacific and SIDS. At least 1 advisory projects in the Pacific / SIDS. | 20 |
| Methodology | <ul style="list-style-type: none"> • General approach – step by step methodology on how they will install the biogas systems at the selected rural educational institutions in Vanuatu; • Calculations of the perceived biogas production based on the data collected from the Department of Climate Change under the Ministry of Climate Change; • Detailed designs of the biogas systems to be installed at each of the selected sites; • Provide a tentative procurement plan including where the systems are to be sourced from, local or overseas suppliers; • Show how the consultant(s) will articulate the preparation and delivery of the pre-installation consultations as well as the biogas trainings; • Timeline – including the starting date, dates of consultations, presentations; • Clear presentation of potential difficulties in carrying out this assignment to install biogas systems in rural educational institutions in Vanuatu, including solutions to overcome perceived obstacles; • Workplan to include total number of person-days and appropriate allocation of person-days with respect to each task. | 40 |



SPREP

Secretariat of the Pacific Regional
Environment Programme



10th Pacific Islands Conference

NATURE CONSERVATION AND PROTECTED AREAS

Nature Conservation Action for a Resilient Pacific



ii. Financial Score – 30 %

The following formula shall be used to calculate the financial score for ONLY the proposals which score 70% or more in the technical criteria:

$$\text{Financial Score} = 30 \times \frac{\text{Lowest Bid Amount}}{\text{Total Bidding Amount of the Proposal}}$$

Reporting Relationships:

The consultant will report primarily to the CCR Director through the Pacific NDC Hub Technical Advisor based at SPREP.

The successful consultant must supply the services to the extent applicable, in compliance with SPREP's Values and Code of Conduct

https://www.sprep.org/attachments/Publications/Corporate_Documents/sprep-organisational-values-code-of-conduct.pdf