

TERMS OF REFERENCE

Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management (MCCAMGEED)

Department of Energy

Barrier Removal for Achieving the National Energy Road Map Targets of Vanuatu Project

Reference No.	PN/FJI/129/22		
Location	Home based with travel to Santo Island, Vanuatu		
Application deadline	29 th September 2022		
Type of Contract	of Contract Individual Consultant		
Post Level	International Consultant - Energy efficiency cook stoves and copra dryer		
Languages required:	English		
Duration of Initial Contract:	150 working days Date of Commencement (tentative): 7 th October 2022 Date of Completion: 31 st May 2022)		

BACKGROUND

The BRANTV project, implemented by the Department of Energy (DoE) with support from UNDP, builds on existing efforts to provide support to rural communities in Vanuatu, especially in terms of energy access, sustainable energy and green growth targets as represented in the updated National Energy Road Map 2016-2030. With some limited efforts been initiated to promote EE cook stoves and copra dryers, more training and support is expected to increase the quality and efficiency of the local production at lower price and reach wider end-user, hence leading to environmental, social, health and economic benefits.

Firewood or fuel wood are widely used as fuel by almost all social categories in the rural communities, even in urban areas of Vanuatu for several reasons, among others, lack of access to clean, affordable and efficient energy. As a result, most of the communities more specifically those living in the rural areas depend on biomass sources however, the availability, cost and quality of wood varies with geographical locations. Since firewood has sometimes to be collected at significant distances from villages, in most cases women are seen as the main person responsible for collecting fire-wood and cooking exposing them more than men to health risk from severe pains and inhaling toxic smoke and burns from open fire.

The BRANTV project seeks to specifically address part of these challenges by introducing and promoting EE cook stoves which will help reduce the work and risk associated with the amount of fire-wood used and open fire cooking. It is important to reduce the smoke of burning fire (smokeless) rather than the normal practice of burning more firewood (with more smoke) during the cooking process. EE copra dryers will also help produce consistently high-quality premium copra. Given the popularity of copra

production in rural areas and the need for more quality copra production, Vanuatu's coconut industry will be shifting more to increase its value-added products in the future. Hopefully, with the introduction of EE cook stoves and copra dryers at the household and community level, which is already an accepted activity for local men and women in Vanuatu and the existing livelihood approach, the project seeks to promote the use and improve the production and marketing.

Objective of the Assignment

The objective of this consultancy service is to support the BRANTV project and the Department of Energy to:

- i. Design and conduct a training workshop to increase the capacity of pre-selected local cook stove trainers or manufactures in both the rural and urban communities.
- ii. Train the trainers (manufacturers) to train and fabricate EE cook stoves within the local communities;
- iii. Carry out research and simulation of EE copra dryer models for fabrication and installation on four demo sites on the east coast of Santo;
- iv. Modify existing hot air dryers according to design in (iii);
- v. Familiarize the trainers and the local community with the requirements for quality and improved EE cook stove and copra dryer technologies.

DUTIES AND RESPONSIBILITIES

Scope of Work

The overall scope of this consultancy service shall be as indicated herein but not limited to the following tasks:

The consultant (or consultancy firm) shall:

- 1. Conduct research, identify the cost of materials and design a feasible, durable, locally acceptable and adaptable EE cooking stove and copra drying technology suitable to the Vanuatu context.
- 2. Design and prepare a training program in the making of EE cooking stoves and EE crop dryer. Training will also cover sourcing of materials, benefits, production techniques, and sales/distribution approach.
- 3. Conduct theoretical training on the design and fabrication of an EE Cook Stoves and EE Copra Dryer:

About 120 participants will be selected from BRANTV RE demonstration sites to attend training and workshops. The detailed plan will have to be communicated to and approved by DoE and BRANTV project team 2 weeks prior the workshop.

4. After the training, the participants (trainers) shall be able to design and develop structural layouts of a specific EE cook stove, identify its components and understand the function of each component. The consultant is responsible for all practical arrangements of the workshop. Focus of the training should be on the conditions and materials available in Vanuatu for the trainers to be able to replicate and benefit from the training locally. A test to assess the mastery will be prepared and administered after training is completed. Artisans achieving a high level of mastery and showing commitment to promote the EE stoves will be provided with necessary tools and materials for fabricating the stoves. Artisans will include those from Port Vila and at

least once from each of the project's village-scale community PV and Pico hydro sites, where power will be available for them to fabricate EE cook stoves to serve the local market on their respective islands.

5. Implementation of comprehensive EE cook stove demo – The consultant shall prepare an implementation plan to promote and fabricate 7,200 cook stove targets and submit with the proposal. This plan will be carried out in 2 modules: (1) promotion and marketing; and (2) fabrication, sale and use.

Module 1: The first module involves the planning, organization and conduct of a roadshow to demonstrate energy efficient cook stoves to villagers to promote their sale and use. The planning process will include vetting of villages to determine those most likely to be receptive to energy efficient cook stoves as well as those most important to promote such stoves to due to deforestation/ecological issues. **Module 2:** The second module involves the fabrication and selling of energy efficient cook stoves (to replace open earth cooking) to 7 200 households and use of stoves

cook stoves (to replace open earth cooking) to 7,200 households and use of stoves three meals per day by these households. Those artisans that do well in mastering EE cook stove fabrication capacity building and show seriousness of purpose in continuing to fabricate cook stoves for sale will be provided with a set of basic tools and materials by the consultant/ Consortium Firm to fabricate their cook stove. Each artisan (target of 120 participants) who attended the training has a target to produce 60 cook stoves each.

6. Design the implementation program of EE copra dryers in four demonstration sites on east Coast of Santo Island. All the materials required for Copra design, development and installation will be provided by the consultant/ Consortium Firm .The artisan will assist with the design layout, structure and installation set up of the electrical fan (solar powered) component to supply heated air to the copra dryers. After the design the artisan will install and test the EE copra dryers for four (4) demo sites on east coast of Santo.

Expected Output and Deliverables

(A) Outputs:

Based on the scope of work outlined above, the following outputs are expected from the consultant and must be completed within the indicative time frame set out in the table below from the effective date (signing) of the contract.

- 1. A completed design of the energy efficient cook stove tested and approved by the Department of Energy.
- 2. An implementation plan to deliver on the objective of EE cook stove and crop dryer
- 3. Training Manual on EE Cook stoves
- 4. Deliver training of fabricated EE cook stoves to 120 participants of selected villages of the RE demonstration sites
- 5. Conduct a total of 4 roadshow to promote use and sale of cook stoves.
- 6. Fabrication of 7,200 EE cook stoves by 120 trainees, distribute and sale in villages targeted for demonstration
- 7. Complete design of EE copra dryer and

8. Installation of 4 copra dryer in four communities in Santo; Lelek, Kole, Lathi and Sara.

Key Deliverables

The key deliverables are as provided:

- 1. Inception report Presentation of assignment outline and first engagement with DoE based on the proposed work plan and the defined scope of works
- 2. Approved design of Energy Efficient Cook Stove
- 3. Training manual (handbook) in Bislama version
- 4. Submission of training plan
- 5. Deliver training to 120 persons from community of RE demonstration sites and submit a training report
- 6. Conduct four roadshow to promote use and sale of cook stoves
- 7. Fabrication of 7,200 EE cook stoves
- 8. Approved design of EE crop dryer
- 9. Installation 4 copra dryers in four communities on Santo: Lelek, Kole, Lathi and Sara

Institutional and Logistics Arrangements

The Communications and Visibility Consultant will work closely with the PMU team, the Communications Officer of the DOE and the Electrification team. The consultant will directly report to Director, DOE in overall and to the BRANTV Project Manager in day to day matters. The PMU and DoE will provide support to ensure deliverables are achieved.

Duration of the Work

a) The consultancy duration is for four 8 months starting from 7thth October 2022 to 31st May 2023.

Duty Station

The consultant or consortium firm will work from home based but require to travel to conduct trainings and undertake fabrication of cook stoves and install copra dryer on the island of Santo.

COMPETENCIES

- Strong analytical, reporting and writing abilities skills;
- Openness to change and ability to receive/integrate feedback;
- Ability to plan, organize, implement and report on work;
- Comprehensiveness knowledge of building energy efficiency;
- Excellent presentation and facilitation skills.
- Demonstrates integrity and ethical standards;
- Positive, constructive attitude to work;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.

- Proficiency in computer packages; good working knowledge of word processing and spreadsheet programs, particularly MS Word, MS Power Point and MS Excel and online communication/conference and training platforms such as Zoom, Google meet, WhatApp, etc..
- Maturity and confidence in dealing with senior members of national institutions.
- Excellent written communication skills, with analytic capacity and ability to synthesize relevant collected data and findings for the preparation of quality policy analysis
- Excellent coordination skills and result oriented collaboration with colleagues

REQUIRED SKILLS AND EXPERIENCE

D.	Qualification/Work Experience					
	The consultant (or Expert/Lead of consultancy firm) should have:					
	Education:					
٠	Degree in engineering field preferably in mechanical and electrical with specialized					
	certification in energy efficiency cook stoves is a plus.					
	Experience:					
	1.	Appropriate technical expertise in EE cooking solution, copra dryers and development specifically domestic energy issues and market mechanisms.				
	2.	Proven experience in the design and operation of technologies such as EE cooking solutions and EE copra dryers, preferably in Vanuatu.				
	3.	Experience in developing manual on RE and EE technology applications and deliver training on RE and EE.				
	4.	At least 5 years of work experience on design and implementation of EE cook stoves and EE copra dryers.				
	5.	A strong understanding on national and international renewable energy issues and technologies.				
	6.	Excellent communication and management skill in English and knowledge of Local language.				
Skills						
•	• Demonstrable effective and creative communications skills:					
•	Results-driven, initiative-taking, ability to work under pressure and meet tight deadlines:					
•	Ability to work independently or with very limited guidance:					
•	Highly motivated with a positive attitude and problem-solving approach:					
•	Good interpersonal and communication skills.					
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Language requirements

- Fluency of English language is required;
- Knowledge of Bislama (local) language is desired

Price Proposal and Schedule of Payments

Consultant must send a financial proposal based on Lump Sum Amount. The total amount quoted shall be all-inclusive and include all costs components required to perform the deliverables identified in the TOR, including professional fee, travel costs, living allowance (if any work is to be done outside the IC's duty station) and any other applicable cost to be incurred by the IC in completing the assignment. The contract price will fixed output-based price regardless of extension of the herein specified duration. Payments will be done upon completion of the deliverables/outputs and as per below percentages:

Deliverables/Outputs	Estimate Duration to Complete	Target Due Dates	Instalment
Inception Report covering Presentation of assignment outline and first engagement with DoE based on the proposed work plan and the defined scope of works	10 days	20 th October 2022	10% of the Contract amount
Deliverable 2: Approved design of Energy Efficient Cook Stove and Deliverable 3: Training manual (handbook) in Bislama version	20 Days	30 November	20 % of the Contract amount
Deliverables 4: Submission of training plans; Deliverable 5: Completion of comprehensive workshops and hands-on technical trainings and produced report: Deliverable 6: Conduct 4 roadshow to promote use and sale of cook stoves	30 Days	15 th January	20% of the Contract amount
Deliverables 7: Fabrication of 7,200 EE cook stoves	60 Days	15 th April 2023	30% of the Contract amount
Deliverables 8: Approved design of EE copra dryer and Deliverable 9: Installation 4 copra dryers in four communities of Santo	30 Days	31 st May	20% of the Contract amount

In general, UNDP shall not accept travel costs exceeding those of an economy class ticket. Should the IC wish to travel on a higher class he/she should do so using their own resources The consultant shall estimate and include their costs of travel and stay in Santo, Vanuatu including tickets, lodging and terminal expenses in its financial proposal.

E. Evaluation Method and Criteria

Only candidates which are responsive and compliant will be evaluated. Individual consultants will be evaluated based on the following methodology:

Individual consultants will be evaluated based on the following **Cumulative analysis** methodology.

The award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as a) responsive/compliant/acceptable; and b) having received the highest score out of set of weighted technical criteria (70%). and financial criteria (30%). Financial score shall be computed as a ratio of the proposal being evaluated and the lowest priced proposal received by UNDP for the assignment.

Technical Criteria for Evaluation (Maximum 70 points)

- **Criteria 1**: Degree in engineering field preferably in mechanical and electrical with specialized certification in energy efficiency cook stoves- Max 10 points;
- **Criteria 2**: Technical expertise in EE cooking solution, copra dryers and development specifically domestic energy issues and market mechanisms- Max 10 points;
- **Criteria 3**: Proven experience in the design and operation of technologies such as EE cooking solutions and EE copra dryers, preferably in Vanuatu- Max 10 points;
- **Criteria 4:** Experience in developing manual on RE and EE technology applications and deliver training on RE and EE -Max 10 points;
- **Criteria 5:** At least 5 years of work experience on design and implementation of EE cook stoves and EE copra dryers-Max 10 points.
- **Criteria 6:** Strong understanding on national and international renewable energy issues and technologies -Max 10 points
- **Criteria 7:** Fluency in English and working knowledge of local language- Max 10 points

Only candidates obtaining a minimum of 70 points for technical criteria would be considered for the Interview and Financial Evaluation.

Shortlisted candidates shall be called for an interview which will be used to confirm and/or adjust the technical scores awarded based on documentation submitted.

Documentation required

Interested individual consultants or consortium firm must submit the following documents/information to demonstrate their qualifications. Please group them into <u>one (1) single</u> <u>PDF document</u> as the application only allows to upload maximum one document:

- Letter of Confirmation of Interest and Availability using the template provided in Annex II.
- **Personal CV**, indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references.
- **Technical proposal**, including a) a brief description of why the individual considers him/herself as the most suitable for the assignment; and b) a methodology, on how they will approach and complete the assignment.
- **Financial proposal**, as per template provided in Annex II. Note: National consultants must quote prices in United States Dollars (USD).

Note: Successful individual or consortium firm will be required to provide proof of medical insurance coverage before commencement of contract for the duration of the assignment.

Incomplete and joint proposals may not be considered. Consultants with whom there is further interest will be contacted. The successful consultant shall opt to sign an Individual Contract or a Reimbursable Loan Agreement (RLA) through its company/employer with UNDP.

Annexes

- Annex I Individual IC General Terms and Conditions
- Annex II Offeror's Letter to UNDP Confirming Interest and Availability for the Individual IC, including Financial Proposal Template

For any clarification regarding this assignment please write to pts.fj@undp.org