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United Nations Development Programme

Terms of Reference for Energy Economist for the GCF 'Accelerating the Transformational Shift to a Low-Carbon Economy in the Republic of Mauritius – Component 1' project

TITLE: Energy Economist (IC)
SECTOR: Renewable Energy
LOCATION: Republic of Mauritius
DUTY STATION: Mauritius Renewable Energy Agency (MARENA), Port Louis, Mauritius and home-based
DURATION: 135 working days (6 field missions – 80 days and home-based – 55 days)
STARTING DATE: 12 February 2019
END DATE: June 2020

A. Project title:

GCF 'Accelerating the transformational shift to a low carbon economy in the Republic of Mauritius' project.

B. Project Description:

The Green Climate Fund (GCF), through the United Nations Development Programme (UNDP), is providing financial support and expertise to assist the Government of Mauritius in achieving their targets set in the Long-Term Energy Strategy 2009-2025 and to empower the two entities, namely the Mauritius Renewable Energy Agency (MARENA) and the Utility Regulatory Authority (URA) for the development and regulation of Renewable Energy (RE), respectively, in Mauritius. In this context, the project – Accelerating the transformational shift to a low-carbon economy in the Republic of Mauritius - is being implemented at national level and is financed under the Green Climate Fund (GCF). The project is being implemented in 3 components whereby Component 1 is focused on the institutional strengthening of MARENA and URA in order to equip them accordingly for the accomplishment of their respective mandates.

The MARENA has been set up in 2015 as per the Mauritius Renewable Energy Agency Act 2015 and has for main objective the promotion of the adoption and use of renewable energy in Mauritius. The objectives of MARENA as enunciated in the MARENA Act are to:

- Promote the adoption and use of renewable energy with a view to achieving sustainable development goals;

- Advise on possible uses of liquid natural gas;
- Create an enabling environment for the development of renewable energy;
- Increase the share of renewable energy in the national energy mix;
- Share information and experience on renewable energy research and technology; and
- Foster collaboration and networking, at regional and international levels, with institutions promoting renewable energy.

The Utility Regulatory Authority (URA) has been set up in 2016 in accordance with the Utility Regulatory Authority Act 2004 to regulate utility services, namely electricity, water and wastewater in Mauritius. The objectives of the URA are to ensure the sustainability and viability of utility services;

- protect the interests of both existing and future customers;
- promote efficiency in both operations and capital investments in respect of utility services;
- promote competition to prevent unfair and anti-competitive practices in the utility services industry.

There are currently 4 and 10 staff respectively at each of these two institutions.

An Energy Economist is required to provide technical assistance on the following aspects:

1. strategic planning and recommendation of policies and regulations;
2. macro and micro economic analyses;
3. costing and budgeting;
4. capacity building for the development of RE in Mauritius;
5. forecasting and economic outlooks, including market trends on the energy and renewable energy sectors both locally and internationally.

C. Scope of Work

The Energy Economist will be based at MARENA, and will interact with representatives of government agencies, as well as with groups representing the interests of public and private businesses. The economist will be focusing, amongst others, on issues related to: (1) renewable energy resources, (2) energy storage, (3) grid modernization, (4) competitive supply and basic service, (5) integration of distributed energy resources, (6) long term energy contracts, (7) electricity generation and power markets, (8) sustainable transportation and (9) heating and cooling.

MARENA has already developed a Renewable Energy Strategic Plan (RESP) with an accompanying Implementation Plan, which details the strategic goals that Mauritius wants to achieve in the coming 5 years in terms of RE development.

The 8 strategic goals that have been developed within the RESP are:

1. Increasing On-Grid RE Technologies;
2. Boosting Off-Grid RE Technologies (Electricity, Transport, Heating/Cooling)
3. Smartening the Grid;
4. Accelerating the Development of Sustainable Transportation;
5. Research, Demonstration, Deployment and Capacity Building;

6. Fostering a dynamic RE Economy;
7. Strengthening International and Regional Linkages;
8. Developing Coherent and Effective Communication Pathways.

These goals are broken down into sub-goals, activities and sub-activities with expected outcomes and KPIs, which need to be completed over a 5-year period.

SADC/GCF Co-funded Consultancy Services

MARENA is also benefitting from a co-financing from the South African Development Community (SADC) and in partnership with GCF, to undertake various RE related studies. The consultancy services will assist to accelerate RE penetration in Mauritius to meet the target of 35% self-sufficiency by 2025 in terms of electricity supply through a progressive increase in the use of RE.

A consultancy firm will be appointed by December 2018 and the scope of works are as follows:-

1. Component 1 – Development of guidelines for assessment and approval of RE technologies with activities such as development of Grid Codes, guidelines, norms and standards for RETs and institutional processes;
2. Component 2 - Assessment and development of incentive schemes for deployment of RE with activities such as conducting a gap analysis on the conduciveness of RE policy and regulatory environment and development of incentive strategies and schemes;
3. Component 3 - Development of funding strategies and schemes for accelerating RE transition with activities such as development of new funding strategies and schemes and associated institutional arrangements;
4. Component 4 – Development of a framework for Green Jobs in RE sector with activities such as assessment of skills needs and gaps and proposal of institutional arrangement for promotion of green jobs.

The above consultancy is over a duration of 1 year with both field missions and home-based. The Energy Economist is required to provide assistance to the Chief Technical Advisor (to be recruited under the GCF project) for the completion of activities within the 4 components above. He/she is required to make required consultations with relevant stakeholders such as, but not limited to, Central Electricity Board, Ministry of Energy and Public Utilities and Utility Regulatory Authority (URA) during the duration of this assignment.

D. Duties and Responsibilities

1. Support the Project Manager and Chief Technical Advisor in reviewing / assessing the work and deliverables of the SADC/GCF consultancy services which will be provided to MARENA, ensuring the technical quality assurance of the deliverables as well as the timely delivery of expected outputs till completion;
2. Assist MARENA, in the completion of the following activities of the 5-year Renewable Energy

Strategic Plan (in collaboration with the CTA, where applicable):

- i. Costing of the activities and sub-activities of the 5-year RE Strategic Plan;
 - ii. Development of a guideline and methodology for conducting economic assessments of on-grid, off-grid sustainable energy projects.
 - iii. Development of RE financing frameworks and instruments and implementing Regulatory Measures for RETs;
 - iv. Developing toolkits and calculators such as financial assessment of Installed Projects, LCOE and other energy economic indicators like Emission Intensity;
 - v. Policy making for development of RE in Mauritius;
 - vi. Development of an M&E Framework for assessing the effectiveness of the implementation of the activities and sub-activities, as listed in the RESP;
3. Provide training to MARENA, URA and CEB staff, as relevant, on the following:
 - a. Energy Statistics and Energy Indicators:
 - i. Fundamentals of Energy Statistics and Energy Indicators;
 - ii. Fundamentals of Energy Economic Analytics;
 - iii. Fundamentals of Policy-making in RE and its impact on economic development.
 - b. Markets, Policy and Technologies covering the following aspects:
 - i. Overview of renewables markets and economics locally and internationally;
 - ii. Analysis of renewables policies in champion countries – effectiveness, cost-efficiency, scope for improvement and wider implementation;
 - iii. Deployment opportunities and challenges in champion countries;
4. Review available materials at MARENA on modelling of optimal mix for RE resources and propose methodology for undertaking associated sensitivity analyses in terms of, but not limited to Energy type and mix, Energy prices and costs, Pollution abatement measures and investment, cost of funding (WACC) and expected IRR;
5. Appraise the feasibility and competitiveness of (solicited and unsolicited) proposals from potential promoters, received by MARENA on RETs and their implementation (up to 10 proposals) from an economic perspective and make recommendations accordingly;
6. Develop a guideline and methodology for undertaking socio-economic analysis of each of the traditional energy sources and RE technologies:
 - a. Investment required (costs over the lifecycle of the project), including environmental and social costs;
 - b. Direct contribution of RE to GDP in nominal and real terms;
 - c. Induced impact on GDP in the rest of the economy by the drag effect;
 - d. Paid taxes and subsidies received by the sector;
 - e. Exports and imports of the sector (i.e. impact on the balance of payments);

- f. Technological development: relevance of industry investment in R&D;
 - g. Readiness for Blockchain and possible implications.
7. Conduct dissemination workshops/seminars on deliverables, as and when required.

Under the SADC/GCF Consultancy:

Component 1 -

8. Review and provide quality assurance in the development of an online project evaluation tool for the assessment of on-grid and off-grid RETs. The tool should allow MARENA to undertake a fair qualitative and quantitative assessment of individual projects and should include the following, but not limited to:-
- a. Environmental, social, technical and economic aspects; and
 - b. Financial aspects, which include the development of a tariff evaluation tool for RETs, taking into consideration the applicable Grid Code and other factors to determine reasonable tariffs. Information such as detailed CAPEX, OPEX and other associated costs/subsidies/rebates will be used as inputs for the tool to generate parameters such as Internal Rate of Return (IRR).
9. Assess the SADC/GCF report on the development of an Electricity Tariff Guidelines and Methodology, which takes into consideration the following:
- a. Tariff Principles;
 - b. Revenue Requirements Determination;
 - c. Generation Tariff Methodology;
 - d. Transmission System Tariff Methodology;
 - e. Distribution System Tariff Methodology;
 - f. Tariff Design and Subsidies;
 - g. Automatic Tariff Adjustment Mechanism;
 - h. Tariff Review Process;

Component 2

10. Review the consolidated report on the assessment and development of incentive scheme for deployment of RE in Mauritius.

Component 3

11. Review the consolidated report on the Development of funding strategies and schemes for accelerating RE transition.

Component 4

12. Review the consolidated report on the creation of a framework for Green Jobs in RE sector in Mauritius.

D. Expected Outputs and Deliverables

The Energy Economist shall be remunerated in accordance with the time schedule and deliverables approved by the National Project Director (NPD) and UNDP. The Chief Technical Advisor will provide his services to the Mauritius Renewable Energy Agency (MARENA) and report to the National Project Director

(NPD) and the GCF Project Coordinator from UNDP. The list of deliverables is shown in Table 1.

Table 1: List of Deliverables of the Energy Economist

	Activity	Tentative date	Fee (%)	Means of verification
1	Produce an approved assignment work plan.	February 2019	10%	Approved assignment work plan
2	Develop Budget/Costing plan for activities and sub-activities of the RE 5-year strategic plan.	March 2019	5%	Approved Budget/Costing Plan
3	Develop toolkits and calculators for the financial assessment of Installed Projects, calculation of LCOE and of other energy economic indicators such as Emission Intensity.	June 2019	10%	Approved tested toolkits and calculators for financial assessment of Installed Projects, calculation of LCOE and of other energy economic indicators such as Emission Intensity.
4	Provide training/capacity building to MARENA, URA and CEB on the following: a. Energy Statistics and Energy Indicators; b. Markets, Policy and Technologies;	Training sessions to be scheduled as required till June 2020	10%	Approved Training materials and training report.
5	Appraise the feasibility and competitiveness of (solicited and unsolicited) proposals received by MARENA on RETs and their implementation (up to 10 proposals) from an economic perspective and make recommendations accordingly.	As and when requests are submitted up to June 2020	10%	Approved report on appraisal of technical proposals.
6	Develop a guideline and methodology for undertaking socio-economic analyses of each of the traditional energy sources and RE technologies: a. Investment required (costs over the lifecycle of the	March 2019	15%	Approved consolidated report on socio-economic analyses of each of the traditional energy sources and RE technologies on the following sections: a. Investment required (costs over the lifecycle of the

	Activity	Tentative date	Fee (%)	Means of verification
	<p>project), including environmental and social costs;</p> <p>b. Direct contribution of RE to GDP in nominal and real terms;</p> <p>c. Induced impact on GDP in the rest of the economy by the drag effect;</p> <p>d. Paid taxes and subsidies received by the sector;</p> <p>e. Exports and imports of the sector (i.e. impact on the balance of payments);</p> <p>f. Technological development: relevance of industry investment in R&D;</p> <p>g. Readiness for Blockchain and possible implications.</p>			<p>project), including environmental and social costs;</p> <p>b. Direct contribution of RE to GDP in nominal and real terms;</p> <p>c. Induced impact on GDP in the rest of the economy by the drag effect;</p> <p>d. Paid taxes and subsidies received by the sector;</p> <p>e. Exports and imports of the sector (i.e. impact on the balance of payments);</p> <p>f. Technological development: relevance of industry investment in R&D;</p> <p>g. Readiness for Blockchain and possible implications.</p>
7	Develop an M&E Framework for assessing the effectiveness of the implementation of the activities and sub-activities, as listed in the RESP.	January 2020	10%	Approved M&E Framework for assessing the effectiveness of the implementation of the activities and sub-activities, as listed in the RESP.
8	Review and critically analyse available materials at MARENA on modelling of optimal mix for RE resources and propose methodology for undertaking associated sensitivity analyses.	February 2020	5%	Approved report on assessment of optimal mix calculation methodology and on recommendations.
9	<u>Under the SADC/GCF consultancy services:</u>			
9.1	<p><u>Component 1</u></p> <p>Review and provide quality</p>	Mid May 2019	5%	Approved online Project Evaluation Tool.

	Activity	Tentative date	Fee (%)	Means of verification
9.2	assurance in the development of an online project evaluation tool for the assessment of on-grid and off-grid RETs; Assess the SADC/GCF report on the development of an Electricity Tariff Guidelines and Methodology.	End May 2019	5%	Approved report on Electricity Tariff Guidelines and Methodology.
9.3	<u>Component 2</u> Review the consolidated report on the assessment and development of incentive scheme for deployment of RE in Mauritius.	End September 2019	5%	Approved consolidated report on the assessment and development of incentive scheme for deployment of RE in Mauritius.
9.4	<u>Component 3</u> Review the consolidated report on the Development of funding strategies and schemes for accelerating RE transition.	End September 2019	5%	Approved consolidated report on the Development of funding strategies and schemes for accelerating RE transition.
9.5	<u>Component 4</u> Review the consolidated report on the creation of a framework for Green Jobs in RE sector in Mauritius.	End November 2019	5%	Approved consolidated report on the creation of a framework for Green Jobs in RE sector in Mauritius.
			100	

E. Reporting

All deliverables shall be in **English** and submitted in appropriate format, in MS Word and in PDF as per requirement of the Client to the following address:

Mr Shakil Beedassy, Project Coordinator
Accelerating the Transformational Shift to a Low-Carbon Economy in the Republic of Mauritius
Email: shakil.beedassy@undp.org
Copied to:
Prof S. Rughooputh
CEO, Mauritius Renewable Energy Agency
Email : ceo@marena.org

And

Ayesha AUMEERUDDY, Project Assistant

Accelerating the Transformational Shift to a Low-Carbon Economy in the Republic of Mauritius (Component 1)

Email: ayesha.aumeeruddy@undp.org

The project coordinator will be responsible for further distribution. The deliverables should be of high quality in form and substance and with appropriate professional presentation. The Energy Economist should fully comply with the requirements of UNDP in terms of content and presentation and respect UNDP GCF visibility guidelines, since unsatisfactory performance may result in termination of contract.

F. Duration of the Work

The duration of the contract of the Energy Economist will be for **135** working person days (6 field missions - 80 days and home-based- 55 days) until June 2020 for the successful completion of the assignment.

G. Duty Station

During the field-based part of the assignment, the Energy Economist will be based at the Mauritius Renewable Energy Agency (MARENA), Port Louis.

H. Competencies

Corporate Competencies:

- Demonstrates commitment to UNDP's mission, vision and values;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability; and
- Highest standards of integrity, discretion and loyalty.

Functional Competencies:

Knowledge Management and Learning

- Shares knowledge and experience;
- Actively works towards continuing personal learning, acts on learning plan and applies newly acquired skills; and
- Ability to train and work effectively with counterpart staff at all levels and with all groups involved in the project.

Development and Operational Effectiveness

- Ability to make critical analysis of documentation and reports related to RE and associated fields;
- Ability to perform a variety of specialized tasks related to Results Management, including support to design, planning and implementation of program, managing data, reporting;
- Ability to effectively coordinate a large, multi-stakeholder project;
- Ability to report analytical outputs in a clear, concise manner to a non-technical audience;

- Ability to maintain appropriate records / uphold quality assurance integrity;
- Strong drafting, presentation and reporting skills, excellent written communication skills;
- Ability to administer budgets;
- Ability to provide input to business processes re-engineering, implementation of new system, including new IT based systems; and
- IT competencies in Word, Excel, Power Point and internet.

Leadership and Self-Management

- Focuses on result for the client and responds positively to feedback; and
- A good personality with strong leadership skills.

I. Qualifications of the Successful Individual Contractor

Education:

Postgraduate degree in Electrical/Power Engineering and/or Energy Economics or a related discipline or a combination of appropriate Bachelor and Postgraduate degrees is required. PhD is desirable but not a requirement.

Experience:

- At least seven (7) years of work experience in the fields of economic analysis of environmental/energy/renewable energy projects/ or financing of environmental/renewable energy projects/ electricity planning or other closely related fields;
- Minimum five (5) years of relevant experience of advisory/development/professional/managerial services or expert work with formulation of policy and economic analysis on renewable energy or environment related initiatives;
- Minimum five (5) years of experience of advisory services to government and/or public/international organizations in program/project design for institutional strengthening and/or capacity building and/or needs assessment in area of renewable energy;
- Working experience with both public and private sector is desirable. Experience in donor funded projects will be an advantage;
- Experience in drafting of technical reports on renewable energy technologies/policies; and
- Experience with energy-related modeling and analyses and software platforms is an advantage.

Language:

- Fluency in English (both written and verbal) is a must. Knowledge of French and Creole is an advantage.

J. Scope of Price Proposal and Schedule of Payments

The financial offer should be quoted as a lump sum amount, all-inclusive (professional fee, insurance, all travel costs, per diem, etc.). UNDP does not accept travel costs exceeding those of an economy class ticket. Should the consultant wish to travel on a higher class he/she should do so using their own resources.

The contract price is fixed regardless of changes in the cost components. In the case of unforeseeable travel (additional mission for example), payment of travel costs including tickets, accommodation and terminal expenses should be agreed upon prior to travel between UNDP and Individual Consultant and will be reimbursed.

Payments will be effected based on deliverables as per section D above. However, financial proposals indicating the all-inclusive fixed total contract price, supported by a breakdown of costs, as per template provided by UNDP, will be requested for shortlisted candidates who pass the technical evaluation.

K. Recommended Presentation of Offer

The following documents are requested:

- a) Duly completed **Letter of Confirmation of Interest and Availability** using the template provided by UNDP;
- b) **Personal CV**, indicating all experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- c) **Technical offer: Brief description** of why the individual considers him/herself as the most suitable for the assignment and a **methodology** on how they will approach and complete the assignment.

L. Criteria for Selection of the Best Offer

Individual consultants will be evaluated based on the following methodology:

Cumulative analysis

When using this weighted scoring method, the award of the contract should 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 a pre-determined set of weighted technical and financial criteria specific to the solicitation.

Table 2 below provides the Evaluation Criteria for the Shortlisting of applicants.

Table 2: Evaluation Criteria for Shortlisting

Criteria	Max. Point
Education	15
Relevant technical experience in the fields of economic analysis of environmental/energy/renewable energy projects	15
Experience in development of Action Plans to implement national strategies including budgeting	10

Criteria	Max. Point
Experience in developing toolkits for financial and economic assessment related to development of RETs	10
Experience in policy making in RE sector in an advisory/ management position	10
Experience in conducting assessment of Human Resources requirements for Energy/ RE sector	10
Experience of working with international funding agencies, government and private sector on RE projects	10
Experience in delivering specialised training	5
Language (English mandatory/French is a plus)	5
Suitability of technical approach	10
TOTAL max.	100

Candidates scoring a minimum of 70% of the maximum marks on the above criteria will be short-listed and called for a competency-based interview.

The financial offers will be evaluated giving the lowest price proposal 30 marks and marking the other more expensive proposals reverse proportionally to the cheapest offer.

The final scoring of short-listed candidates will take into account the interview score and the financial score.

The method of calculation of the final score is shown in Table 3 below.

Table 3: Calculation of Scores for Selection of the Energy Economist

Criteria	Weight	Max. Point
• Interview score	70%	70
• Financial score	30%	30

The candidate ranking highest shall be selected.

L. Approval

This TOR is approved by:

Signature



Name and Designation : Satyajeet Ramchurn, Head of Environment Unit

Date of Signing

4 Dec 2018