



INDIVIDUAL CONSULTANT PROCUREMENT NOTICE

Date: 8/8/2022

Reference: LBN-CO- IC-203-22

National or International consultant: International Consultant

Description of the assignment (Title of consultancy): International Consultancy to provide the necessary technical support for the effective design, implementation, and validation of biogas projects

Project Title: Country Entrepreneurship for Distributed Renewables Opportunities (CEDRO 5) - 00118152

Period of assignment/services: 76 working days spread over 24 months

Is this a LTA (yes/no): No

Proposals should be submitted online through the UNDP job site at <https://jobs.undp.org/> no later than; **22 August 2022 at 11:59 PM Beirut Local Time. Proposals will not be received through email.**

Any request for clarification must be sent in writing to the e-mail Procurement.lb@undp.org The UNDP Procurement Unit will respond in writing by standard electronic mail and will send written copies of the response, including an explanation of the query without identifying the source of inquiry, to all consultants.

1. Background / Project Description

The United Nations Development Programme, in support of the Ministry of Energy and Water, has initiated the implementation of the CEDRO 5 project, co-funded by the European Union. The CEDRO 5 project is implemented in partnership with the Association of Lebanese Industrialists (ALI), The Lebanon Green Building Council (LGBC), and the International Renewable Energy Credits (I-REC) Institution.

The European Commission (EC) is encouraging innovation and entrepreneurship in Lebanon to support a clean energy transition. The overall aim of the EC is to address job creation and growth in support of Lebanon's economy, in line with the priority sector of the Single Support Framework for EU Support to Lebanon (2017-

2020), while supporting Climate Change Mitigation in Lebanon. The specific objective is to promote innovation, entrepreneurship, and job creation in support of Lebanon's clean energy transition and Nationally Determined Contributions (NDCs) for the energy sector. The EC proposes the gradual shift towards a clean energy transition (gradual phasing out from fossil fuels by switching to renewable energy sources) and circular economy principles, paving the way for (1) tapping into the potential for green jobs and growth (in particular in the energy sector), (2) alleviating financial and economic burden of the current energy system on the various sectors and sub-sectors of Lebanon, (3) facilitating access to financing, and (4) improving the linkages amongst green entrepreneurship, small-and-medium sized enterprises (SMEs), industries and research/technology centers.

The CEDRO 5 project aims to achieve the above outlined objectives through enhancing innovation, entrepreneurship, and research, assisting in technology transfer and the creation of new value chains in the renewable energy and energy efficiency sector, supporting and initiating enabling policy, training and capacity building, and targeting effective awareness initiatives on renewable energy (RE) and energy efficiency (EE).

2. Scope of work, responsibilities and description of the proposed analytical work

UNDP are responsible to secure the 5 beneficiaries for industrial and/or commercial institutions for the biogas technology interventions.

The facilities targeted for the biogas plants assessments are:

- From animal farms and/or slaughterhouses,
- From agro-food industry or the commercial sector such as supermarkets, caterers...
- From municipal solid waste sorting plants where sorting at source has taken place

The selection of the 2 facilities will be done by CEDRO team in close coordination with the international consultant.

The objective of the international consultant is to provide the necessary technical support for the effective design, technical specifications drafting, monitoring of implementation of biogas activities, and technology transfer.

This includes:

- Task 1: Prefeasibility studies for 5 different selected facilities**
- Task 2: Support in the design, technical specifications drafting, and monitoring of implementation of end-use biogas projects in various commercial and/or industrial facilities across the Lebanese Territory;**
- Task 3: Support the process of technology transfer for the implemented biogas application for Lebanon;**
- Task 4: Assessment of an existing biogas plant and validation of the report done for the rehabilitation of the plant**

The technical backstopping services will include the following:

Task 1 Prefeasibility studies for 5 different selected facilities

The objective of the Task 1 is to provide the CEDRO 5 team with a preliminary and concise overview assessment on the potential applicability, scope (e.g. optimal sizing, technology), and required budget estimation for up to five prospective sites in specific:

- 1.1.1 Data acquisition list preparation to assess the applicability of a biogas plant
- 1.1.2 Assess the applicability of a biogas plant for the selected beneficiary sites based on their submitted application form data and establish the timeframe and major milestones for the proposed works;
- 1.1.3 Identify suitable biogas plant solution including recommendation on minimum technical requirements;
- 1.1.4 Basic concept of biogas systems including digester technology that matches selected site's feedstock, temperature of the surrounding environment, pH values, and other operating parameters in addition to the integration in existing network;
- 1.1.5 The guidelines for each site in terms of storage and utilization of the biogas. Both cooking and/or electricity as an output is expected. Guidelines for any civil work requirements per identified/selected site;
- 1.1.6 Estimation of total budget for the proposed system;
- 1.1.7 Prefeasibility Report and communication (PowerPoint presentation including the recommended solution, estimated budget, and yearly energy produced with clarification if needed) for each site

The international consultant will be required to review up to five sites and recommend the most feasible. All necessary preliminary data needed will be provided, upon guidance on the required data types/parameters from the consultant, by the UNDP CEDRO team.

Task 2 Support in the design, technical specifications drafting, and monitoring of implementation of end-use biogas projects in various commercial and/or industrial facilities across the Lebanese Territory;

The international consultant will be required to develop the **full technical specifications** for two biogas plants out of the five predefined sites to which a prefeasibility study was undertaken.

In order to develop the full technical specifications, the international consultant will be required to undertake the following:

2.1 Support in the design of the selected beneficiary sites

After choosing the two (out of the five assessed sites) beneficiary sites, the international consultant is responsible to:

- 2.1.1 Prepare the necessary biogas technical specifications and tender documents for the procurement of goods and services for all proposed works. The Tender documents and technical specifications

will include: design and engineering specifications (complete with sizing notes); equipment specifications; installation requirements; testing and commissioning procedures; monitoring and verification methods; warranty arrangements, evaluation criteria, etc. 2 complete technical specifications and supporting documentation are required;

- 2.1.2 Assist in replying to queries by prospective contractual bidders, and in the review and evaluation of the received bids/offers including the preparation of bid evaluation reports in line with UNDP requirements;
- 2.1.3 Assist in the establishment of general work procedures for contractors, including: supply schedules, goods inspection and certification, quality control and assurance procedures and measures, receipt of goods procedures and arrangements, standard site work formats, etc.

Bidding documents will include the technical specifications for each of the identified solution.

2.2 Support in the supervision of the selected pilot projects

- 2.2.1 Develop checklists for the following: site supervision; operation and maintenance (O&M) (taking into consideration suppliers' recommendations); performance monitoring, and data collection and evaluation – for each site;
- 2.2.2 Support the review of certificates of works, and provide advice to address problems that may arise during the execution of works; as well as advice on handover arrangements and spare parts arrangements;
- 2.2.3 Undertake selected and targeted site supervision and performance testing;
- 2.2.4 Follow-up with the UNDP team to support in the supervision of pilot sites and troubleshoot technical issues that may arise during implementation and/or operation;
- 2.2.5 Assist in capacity building on the operation and maintenance of biogas solutions for the facility teams of the selected sites (through guiding winning contractors that will be responsible for O&M training for the facilities respective staff)
- 2.2.6 Prepare commissioning report for all completed sites

Task 3: Support the process of technology transfer for the implemented biogas applications for Lebanon

The process of technology transfer of the biogas technology will be achieved through three main tasks where the international consultant has to develop and deliver a capacity building program based on the biogas technology types. More specifically:

3.1 Technology Transfer Activities

The international consultant is to develop and deliver one technical workshop detailing the biogas technology deployed by the projects. The target audience will include: engineering professionals in the field, facility managers and engineers, and final year engineering students. The CEDRO 5 team will be in charge of organizing and covering the financial costs of the local logistics related to the capacity building workshop. The workshop will focus on the following:

- Introduction to the technology (general);
- State of the technology (from a technical / financial feasibility perspective);

- Design process (data collection, needs identification, sizing / process identification, developing specifications, implementation guidelines, testing and commissioning, operation and maintenance);
- Implementation procedures and case study examples;
- Questions and answers.

3.2 Guideline Report

The international consultant is to prepare a Guideline Report for the Lebanese context on applicable biogas technology types (stirred tank reactor, plug flow reactor, up-flow anaerobic sludge blanket, and/or an expanded granular sludge bed). The report will feature the following sections:

- Procedures for sizing and design;
- Recommended specifications for system components;
- Installation best-practices;
- Operation and maintenance standards and procedures, and;
- Financial appraisal of the systems.

The report shall be prepared in English and must be proof-read by English-writing editors for publication objectives. An executive summary is required.

3.3 Assessment for biogas potential in Lebanon

The international consultant shall prepare an assessment report for biogas potential in Lebanon where he/she shall review all the currently available data and information on biogas in Lebanon, including yet not limited to the National Bioenergy Strategy for Lebanon (UNDP-CEDRO, 2012 - <https://www.cedro-undp.org/Library/Assets//Gallery/Publications/Bioenergy.pdf>), and list the potential projects that require further investigation and validation, through site visits and/or interviews in addition to the legal aspects stating what rules and regulations need to be set and advocated for to create this value chain in Lebanon.

Task 4 Assessment of an existing biogas plant and validation of the report done for the rehabilitation of the plant

In 2014, a biogas unit at a Solid Waste Composting Facility was implemented consisting of the below main items in addition to all accessories needed for a proper operation. Unfortunately, the biogas plant is not functioning:

- 2x100KW (85m³/hr each) co-generators
- 150 m³/hr Dehumidifier with blower
- 150 m³/hr Desulfurization
- 150 m³/hr torch
- 30 m³ buffer tank

In July 2018, an international biogas expert firm assessed the site and drafted a detailed report on the equipment and works needed to make it functional again with a detailed BOQ for the cost of the rehabilitation.

The international consultant will be required to undertake the following:

- Conduct a site visit to assess the site

- Revise the written report (UNDP will share the report in due time)
- Draft a new report validating the old report and identifying additional works needed for a good operation of the biogas plant and PowerPoint presentation

3. Expected Outputs and deliverables

The deliverables are to be submitted in stages of draft and final. Each deliverable is to be submitted in the form of a soft copy to the CEDRO 5 team. The time needed by the CEDRO 5 team for the review of each submitted deliverable is 5 working days. All deliverables are to be submitted in the English Language. The Required deliverables under the terms of reference are:

For additional information, please refer to ANNEX I – Terms of Reference

3. REQUIREMENTS FOR EXPERIENCE AND QUALIFICATIONS

The Individual Consultant should possess the following minimum qualifications:

I- Academic Qualifications:

- a. Bachelor's degree in mechanical engineering, chemical engineering, renewable energy, biomass/biogas or related field (required)
- b. Masters' degree in mechanical engineering or related field with focus on renewable energy (is a plus)

Copy of degrees / certifications must be submitted for full evaluation grading.

II- Years of Experience:

At least 7 years of experience in conducting feasibility studies and detail design of biogas systems

III. Technical experience:

- Overall relevant experience in biogas sector of not less than 7 years - The bidder should submit proof of completed assignment.
- Experience in preparation of tender document and elaboration of technical specifications
- Experience in working with UNDP or other local or international non-governmental organizations on biogas design and/or implementation.

List of completed projects (to be accounted for in the experience) should be provided listing: project name, nature of work completed, year of completion, description of type of facility. Failure to submit the here mentioned information, the criterion will not be considered.

4. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS.

Interested individual consultants must submit the following documents/information to demonstrate their qualifications:

(I). Technical Proposal:

(i) **Letter to UNDP Confirming Interest and Availability for the Individual Contractor (IC) Assignment**

(ii) **Explaining why** you are the most suitable for the work

(iii) P11 (Personal History Form) including past experience in **similar projects** and at least **3 references**, mentioning the references' e-mails addresses.

5. FINANCIAL PROPOSAL

- **Lump sum contracts**

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables. Payments are based upon output, i.e. upon delivery of the services specified in the TOR as follows:

Payment	Deliverables	Potential dates
8%	Deliverable 1: Techno-financial feasibility study for sites 1 and 2 (Tasks 1.1.1-1.1.7 for 2 sites)	2 months after contract signature
10%	Deliverable 2: Task 4 report and communication (Task 4)	3 months after contract signature
12%	Deliverable 3: Techno-financial feasibility study for sites 3,4, and 5 (Tasks 1.1.1-1.1.7 for 3 sites)	5 months after contract signature
20%	Deliverable 4: <ul style="list-style-type: none">• Site inspection report for beneficiary site 1• Full technical specifications for beneficiary site 1• Assist PMU in clarifying procurement related questions• Report on the evaluation of bids• General work procedures for contractors and checklists (Tasks 2.1.1-2.1.3 & 2.2.1-2.2.5 for 1 site)	10 months after contract signature
20%	Deliverable 5: <ul style="list-style-type: none">• Site inspection report for beneficiary site 2• Full technical specifications for beneficiary site 2	15 months after contract signature

	<ul style="list-style-type: none"> Assist PMU in clarifying procurement related questions Report on the evaluation of bids General work procedures for contractors and checklists (Tasks 2.1.1-2.1.3 & 2.2.1-2.2.5 for 1 site) 	
10%	Deliverable 6: Prepare the commissioning reports for implemented site 1 (Task 2.2.6 for 1 site) Technology transfer workshop (Task 3.1)	18 months after contract signature
10%	Deliverable 7: Prepare the commissioning reports for implemented site 2 (Task 2.2.6 for 1 site) Development of guideline report (Task 3.2)	20 months after contract signature
10%	Deliverable 8: <ul style="list-style-type: none"> Assessment report for biogas potential in Lebanon (Task 3.3) 	24 months after contract signature

In order to assist the requesting unit in the comparison of financial proposals, **the financial proposal shall include a breakdown of this lump sum amount (including travel, per diems, and number of anticipated working days).** The financial proposal shall be presented using the enclosed format of Appendix a - Annex III.

Travel:

All envisaged travel costs must be included in the financial proposal. This includes all travel to join duty station/repatriation travel. In general, UNDP should 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.

In the case of unforeseeable travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and Individual Consultant, prior to travel and will be reimbursed.

6. EVALUATION

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.

* *Technical Criteria weight; [70%]*

* *Financial Criteria weight; [30%]*

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

Criteria	Weight	Max. Point
<u><i>Technical Competence</i></u>	70%	100
<ul style="list-style-type: none"> <i>Educational background:</i> <i>Bachelor's degree in mechanical engineering, chemical engineering, renewable energy, biomass/biogas or related field (20 points)</i> <i>Masters' degree or above in mechanical engineering or related field with focus on renewable energy (30 points)</i> 		30
<ul style="list-style-type: none"> <i>Technical experience:</i> <i>Years of experience</i> <i>Less than 7 years: 0 points</i> <i>7-8 years: 20 points</i> <i>9-10 years: 25 points</i> <i>More than 10 years: 30 points</i> 		30
<ul style="list-style-type: none"> <i>Technical experience:</i> <i>Experience in designing biogas plants:</i> <i>1 or 2 sites: 5 points</i> <i>Up to 4 sites: 10 points</i> <i>Up to 6 sites: 15 points</i> <i>7 or more sites: 20 points</i> <i>Experience in preparation of tender document and elaboration of technical specifications: 10 points</i> <i>1 project prepared: 3 points</i> <i>2 projects prepared: 5 points</i> <i>3 projects prepared: 7 points</i> <i>4 or more projects prepared: 10 points</i> <i>Experience in working with UNDP or other local or international non-governmental organizations on solar PV design and/or implementation (10 points)</i> 		40

<i>Financial (Lower Offer/Offer*100)</i>	<u>30%</u>	100
<u>Total Score</u>	Technical Score * 0.7 + Financial Score * 0.3	

How to apply:

The consultancy is open for all national consultants who meet the selection criteria and propose a competitive fee. Interested consultants are requested to apply only through this UNDP jobs portal.

Submissions through any other media will not be considered.

The application must include all of the following documents:

1. P11,
2. Annex 3 (Offerors Letter) and
3. Financial proposal

All files shall be submitted in one single document and uploaded as word or PDF file to the UNDP job site.

It has been observed that bidders don't submit all requested documents and thus reducing their chance to be selected for a contract with UNDP. before you submit your offer please revise that the application is complete and comprises all four (4) documents.

Incomplete applications will not be considered.

ANNEXES

ANNEX I - TERMS OF REFERENCE (TOR)

ANNEX II - INDIVIDUAL CONSULTANT CONTRACT AND GENERAL TERMS AND CONDITIONS

ANNEX III - OFFEROR'S LETTER TO UNDP CONFIRMING INTEREST AND AVAILABILITY FOR THE INDIVIDUAL CONTRACTOR (IC) ASSIGNMENT