

INVITATION TO BID

Delivery, Installation, and Commissioning of the bioenergy co-generator for the successful operation of the Baalbek biogas production plant in Baalbek, Bekaa, Lebanon

Project Title: The Integrated Solid Waste Management for Baalbek Caza
Lebanon



United Nations Development Programme

May, 2015

Section 1. Letter of Invitation

Beirut, Lebanon
May 19, 2015

Delivery, Installation, and Commissioning of the bioenergy co-generator for the successful operation of the Baalbek biogas production plant in Baalbek, Bekaa, Lebanon
Reference: LEB/CO ITB/69/15

Dear Mr. /Ms.:

The United Nations Development Programme (UNDP) hereby invites you to submit a Bid to this Invitation to Bid (ITB) for the above-referenced subject.

This ITB includes the following documents:

- Section 1 – This Letter of Invitation
- Section 2 – Instructions to Bidders (including Data Sheet)
- Section 3 – Scope of Works
- Section 4 – Bid Submission Form
- Section 5 – Documents Establishing the Eligibility and Qualifications of the Bidder
- Section 6 – Technical Bid Form
- Section 7 – Price Schedule Form
- Section 8 - Form for Bid Security
- Section 9 - Form for Performance Security
- Section 10 –General Terms and Conditions

Your offer, comprising of a Technical Bid and Price Schedule, together in a sealed envelope, should be submitted in accordance with Section 2.

You are kindly requested to submit an acknowledgment letter to UNDP to the following address:

United Nations Development Programme
Arab African International Bank Building, Riad El Solh Street
Nejmeh, Beirut 2011 5211, Lebanon
Email Address: procurement.lb@undp.org
Attention: Procurement Unit, UNDP Lebanon

The letter should be received by UNDP no later than **11 June 2015**. The same letter should advise whether your company intends to submit a Bid. If that is not the case, UNDP would appreciate your indicating the reason, for our records.

If you have received this ITB through a direct invitation by UNDP, transferring this invitation to another firm requires notifying UNDP accordingly.

Should you require any clarification, kindly communicate with the contact person identified in the

attached Data Sheet as the focal point for queries on this ITB.

UNDP looks forward to receiving your Bid and thanks you in advance for your interest in UNDP procurement opportunities.

Yours sincerely,

Luca Renda, UNDP Country Director

Section 2: Instruction to Bidders

Definitions

- a) *“Bid”* refers to the Bidder’s response to the Invitation to Bid, including the Bid Submission Form, Technical Bid and Price Schedule and all other documentation attached thereto as required by the ITB.
- b) *“Bidder”* refers to any legal entity that may submit, or has submitted, a Bid for the supply of goods and provision of related services requested by UNDP.
- c) *“Contract”* refers to the legal instrument that will be signed by and between the UNDP and the successful Bidder, all the attached documents thereto, including the General Terms and Conditions (GTC) and the Appendices.
- d) *“Country”* refers to the country indicated in the Data Sheet.
- e) *“Data Sheet”* refers to such part of the Instructions to Bidders used to reflect conditions of the tendering process that are specific for the requirements of the ITB.
- f) *“Day”* refers to calendar day.
- g) *“Goods”* refer to any tangible product, commodity, article, material, wares, equipment, assets or merchandise that UNDP requires under this ITB.
- h) *“Government”* refers to the Government of the country where the goods and related services provided/rendered specified under the Contract will be delivered or undertaken.
- i) *“Instructions to Bidders”* refers to the complete set of documents which provides Bidders with all information needed and procedures to be followed in the course of preparing their Bid
- j) *“ITB”* refers to the Invitation to Bid consisting of instructions and references prepared by UNDP for purposes of selecting the best supplier or service provider to fulfil the requirement indicated in the Schedule of Requirements and Technical Specifications.
- k) *“LOI”* (Section 1 of the ITB) refers to the Letter of Invitation sent by UNDP to Bidders.
- l) *“Material Deviation”* refers to any contents or characteristics of the bid that is significantly different from an essential aspect or requirement of the ITB, and (i) substantially alters the scope and quality of the requirements; (ii) limits the rights of UNDP and/or the obligations of the offeror; and (iii) adversely impacts the fairness and principles of the procurement process, such as those that compromise the competitive position of other offerors.
- m) *“Schedule of Requirements and Technical Specifications”* refers to the document included in this ITB as Section 3 which lists the goods required by UNDP, their specifications, the related services,

activities, tasks to be performed, and other information pertinent to UNDP's receipt and acceptance of the goods.

- n) "*Services*" refers to the entire scope of tasks related or ancillary to the completion or delivery of the goods required by UNDP under the ITB.
- o) "*Supplemental Information to the ITB*" refers to a written communication issued by UNDP to prospective Bidders containing clarifications, responses to queries received from prospective Bidders, or changes to be made in the ITB, at any time after the release of the ITB but before the deadline for the submission of Bid.

A. GENERAL

1. UNDP hereby solicits Bids as a response to this Invitation to Bid (ITB). Bidders must strictly adhere to all the requirements of this ITB. No changes, substitutions or other alterations to the rules and provisions stipulated in this ITB may be made or assumed unless it is instructed or approved in writing by UNDP in the form of Supplemental Information to the ITB.
2. Submission of a Bid shall be deemed as an acknowledgement by the Bidder that all obligations stipulated by this ITB will be met and, unless specified otherwise, the Bidder has read, understood and agreed to all the instructions in this ITB.
3. Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of any Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this ITB.
4. UNDP implements a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical practices, and obstruction. UNDP is committed to preventing, identifying and addressing all acts of fraud and corrupt practices against UNDP as well as third parties involved in UNDP activities. (See http://www.undp.org/about/transparencydocs/UNDP_Anti_Fraud_Policy_English_FINAL_june_2011.pdf and http://www.undp.org/content/undp/en/home/operations/procurement/procurement_protest/ for full description of the policies)
5. In responding to this ITB, UNDP requires all Bidders to conduct themselves in a professional, objective and impartial manner, and they must at all times hold UNDP's interests paramount. Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. All Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they:
 - 5.1 Are, or have been associated in the past, with a firm or any of its affiliates which have been engaged UNDP to provide services for the preparation of the design, Schedule of Requirements and

Technical Specifications, cost analysis/estimation, and other documents to be used for the procurement of the goods and related services in this selection process;

5.2 Were involved in the preparation and/or design of the programme/project related to the goods and related services requested under this ITB; or

5.3 Are found to be in conflict for any other reason, as may be established by, or at the discretion of, UNDP.

In the event of any uncertainty in the interpretation of what is potentially a conflict of interest, Bidders must disclose the condition to UNDP and seek UNDP's confirmation on whether or not such conflict exists.

6. Similarly, the following must be disclosed in the Bid:

6.1 Bidders who are owners, part-owners, officers, directors, controlling shareholders, or key personnel who are family of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving the goods and related services under this ITB; and

6.4 Others that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.

Failure of such disclosure may result in the rejection of the Bid.

7. The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered as an independent entity, the extent of Government ownership/share, receipt of subsidies, mandate, access to information in relation to this ITB, and others that may lead to undue advantage against other Bidders, and the eventual rejection of the Bid.

8. All Bidders must adhere to the UNDP Supplier Code of Conduct, which may be found at this link: <http://web.ng.undp.org/procurement/undp-supplier-code-of-conduct.pdf>

B. CONTENTS OF BID

9. Sections of Bid

Bidders are required to complete, sign and submit the following documents:

9.1 Bid Submission Cover Letter Form (see ITB Section 4);

9.2 Documents Establishing the Eligibility and Qualifications of the Bidder (see ITB Section 5);

9.3 Technical Bid (see prescribed form in ITB Section 6);

9.4 Price Schedule (see prescribed form in ITB Section 7);

9.5 Bid Security, if applicable (if required and as stated in the DS nos. 9-11, see prescribed Form in ITB Section 8);

9.6 Any attachments and/or appendices to the Bid (including all those specified under the **Data Sheet**)

10. Clarification of Bid

- 10.1 Bidders may request clarification of any of the ITB documents no later than the number of days indicated in the **Data Sheet** (DS no. 16) prior to the Bid submission date. Any request for clarification must be sent in writing via courier or through electronic means to the UNDP address indicated in the **Data Sheet** (DS no. 17). UNDP will respond in writing, transmitted by electronic means and will transmit copies of the response (including an explanation of the query but without identifying the source of inquiry) to all Bidders who have provided confirmation of their intention to submit a Bid.
- 10.2 UNDP shall endeavor to provide such responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of UNDP to extend the submission date of the Bid, unless UNDP deems that such an extension is justified and necessary.

11. Amendment of Bid

- 11.1 At any time prior to the deadline for submission of Bid, UNDP may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of a Supplemental Information to the ITB. All prospective Bidders will be notified in writing of all changes/amendments and additional instructions through Supplemental Information to the ITB and through the method specified in the **Data Sheet** (DS No. 18).
- 11.2 In order to afford prospective Bidders reasonable time to consider the amendments in preparing their Bid, UNDP may, at its discretion, extend the deadline for submission of Bid, if the nature of the amendment to the ITB justifies such an extension.

C. PREPARATION OF BID

12. Cost

The Bidder shall bear any and all costs related to the preparation and/or submission of the Bid, regardless of whether its Bid was selected or not. UNDP shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.

13. Language

The Bid, as well as any and all related correspondence exchanged by the Bidder and UNDP, shall be written in the language (s) specified in the **Data Sheet** (DS No. 4). Any printed literature furnished by the Bidder written in a language other than the language indicated in the **Data Sheet**, must be accompanied by a translation in the preferred language indicated in the **Data Sheet**. For purposes of interpretation of the Bid, and in the event of discrepancy or inconsistency in meaning, the version translated into the preferred language shall govern. Upon conclusion of a contract, the language of the contract shall govern the relationship between the contractor and UNDP.

14. Bid Submission Form

The Bidder shall submit the Bid Submission Form using the form provided in Section 4 of this ITB.

15. Technical Bid Format and Content

Unless otherwise stated in the **Data Sheet** (DS no. 28), the Bidder shall structure the Technical Bid as follows:

- 15.1 Expertise of Firm/Organization – this section should provide details regarding management structure of the organization, organizational capability/resources, and experience of organization/firm, the list of projects/contracts (both completed and on-going, both domestic and international) which are related or similar in nature to the requirements of the ITB, manufacturing capacity of plant if Bidder is a manufacturer, authorization from the manufacturer of the goods if Bidder is not a manufacturer, and proof of financial stability and adequacy of resources to complete the delivery of goods and provision of related services required by the ITB (see ITB Clause 18 and DS No. 26 for further details). The same shall apply to any other entity participating in the ITB as a Joint Venture or Consortium.
- 15.2 Technical Specifications and Implementation Plan – this section should demonstrate the Bidder's response to the Schedule of Requirements and Technical Specifications by identifying the specific components proposed; how each of the requirements shall be met point by point; providing a detailed specification and description of the goods required, plans and drawings where needed; the essential performance characteristics, identifying the works/portions of the work that will be subcontracted; a list of the major subcontractors, and demonstrating how the bid meets or exceeds the requirements, while ensuring appropriateness of the bid to the local conditions and the rest of the project operating environment during the entire life of the goods provided. Details of technical bid must be laid out and supported by an Implementation Timetable, including Transportation and Delivery Schedule where needed, that is within the duration of the contract as specified in the **Data Sheet** (DS noS. 29 and 30).

Bidders must be fully aware that the goods and related services that UNDP require may be transferred, immediately or eventually, by UNDP to the Government partners, or to an entity nominated by the latter, in accordance with UNDP's policies and procedures. All bidders are therefore required to submit the following in their bids :

- a) A statement of whether any import or export licences are required in respect of the goods to be purchased or services to be rendered, including any restrictions in the country of origin, use or dual use nature of the goods or services, including any disposition to end users;
- b) Confirmation that the Bidder has obtained license of this nature in the past, and have an expectation of obtaining all the necessary licenses, should their bid be rendered the most responsive; and
- c) Complete documentation, information and declaration of any goods classified or may be classified as "Dangerous Goods".

- 15.3 Management Structure and Key Personnel – This section should include the comprehensive

curriculum vitae (CVs) of key personnel that will be assigned to support the implementation of the technical bid, clearly defining their roles and responsibilities. CVs should establish competence and demonstrate qualifications in areas relevant to the requirements of this ITB.

In complying with this section, the Bidder assures and confirms to UNDP that the personnel being nominated are available to fulfil the demands of the Contract during its stated full term. If any of the key personnel later becomes unavailable, except for unavoidable reasons such as death or medical incapacity, among other possibilities, UNDP reserves the right to render the Bid non-responsive. Any deliberate substitution of personnel arising from unavoidable reasons, including delay in the implementation of the project of programme through no fault of the Bidder, shall be made only with UNDP's acceptance of the justification for substitution, and UNDP's approval of the qualification of the replacement who shall be either of equal or superior credentials as the one being replaced.

15.4 Where the **Data Sheet** requires the submission of the Bid Security, the Bid Security shall be included along with the Technical Bid. The Bid Security may be forfeited by UNDP, and reject the Bid, in the event of any or any combination of the following conditions:

- a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the **Data Sheet** (DS no. 11), or;
- b) If the Bid Security amount is found to be less than what is required by UNDP as indicated in the **Data Sheet** (DS no. 9), or;
- c) In the case the successful Bidder fails:
 - i. to sign the Contract after UNDP has awarded it;
 - ii. to comply with UNDP's variation of requirement, as per ITB Clause 35; or
 - iii. to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering effective the contract that may be awarded to the Bidder.

16. Price Schedule

The Price Schedule shall be prepared using the attached standard form (Section 7). It shall list all major cost components associated with the goods and related services, and the detailed breakdown of such costs. All goods and services described in the Technical Bid must be priced separately on a one-to-one correspondence. Any output and activities described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of the items or activities, as well as in the final total price of the bid.

17. Currencies

All prices shall be quoted in the currency indicated in the **Data Sheet** (DS no. 15). However, where Bids are quoted in different currencies, for the purposes of comparison of all Bid:

17.1 UNDP will convert the currency quoted in the Bid into the UNDP preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of

- submission of Bid; and
- 17.2 In the event that the Bid found to be the most responsive to the ITB requirement is quoted in another currency different from the preferred currency as per **Data Sheet** (DS no. 15), then UNDP shall reserve the right to award the contract in the currency of UNDP's preference, using the conversion method specified above.

18. Documents Establishing the Eligibility and Qualifications of the Bidder

- 18.1 The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the forms provided under Section 5, Bidder Information Forms. In order to award a contract to a Bidder, its qualifications must be documented to UNDP's satisfactions. These include, but are not limited to the following:
- a) That, in the case of a Bidder offering to supply goods under the Contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' manufacturer or producer to supply the goods in the country of final destination;
 - b) That the Bidder has the financial, technical, and production capability necessary to perform the Contract; and
 - c) That, to the best of the Bidder's knowledge, it is not included in the UN 1267 List or the UN Ineligibility List, nor in any and all of UNDP's list of suspended and removed vendors.
- 18.2 Bids submitted by two (2) or more Bidders shall all be rejected by UNDP if they are found to have any of the following:
- a) they have at least one controlling partner, director or shareholder in common; or
 - b) any one of them receive or have received any direct or indirect subsidy from the other/s; or
 - c) they have the same legal representative for purposes of this ITB; or
 - d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this ITB process;
 - e) they are subcontractors to each other's bid, or a subcontractor to one bid also submits another Bid under its name as lead Bidder; or
 - f) an expert proposed to be in the bid of one Bidder participates in more than one Bid received for this ITB process. This condition does not apply to subcontractors being included in more than one Bid.

19. Joint Venture, Consortium or Association

If the Bidder is a group of legal entities that will form or have formed a joint venture, consortium or association at the time of the submission of the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the joint venture jointly and severally, and this shall be duly evidenced by a duly notarized Agreement among the legal entities, which shall be submitted along with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all entities that comprise

the joint venture.

After the bid has been submitted to UNDP, the lead entity identified to represent the joint venture shall not be altered without the prior written consent of UNDP. Furthermore, neither the lead entity nor the member entities of the joint venture can:

- a) Submit another Bid, either in its own capacity; nor
- b) As a lead entity or a member entity for another joint venture submitting another Bid.

The description of the organization of the joint venture/consortium/association must clearly define the expected role of each of the entity in the joint venture in delivering the requirements of the ITB, both in the bid and in the Joint Venture Agreement. All entities that comprise the joint venture shall be subject to the eligibility and qualification assessment by UNDP.

Where a joint venture is presenting its track record and experience in a similar undertaking as those required in the ITB, it should present such information in the following manner:

- a) Those that were undertaken together by the joint venture; and
- b) Those that were undertaken by the individual entities of the joint venture expected to be involved in the performance of the services defined in the ITB.

Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the joint venture or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.

If the Bid of a joint venture is determined by UNDP as the most responsive Bid that offers the best value for money, UNDP shall award the contract to the joint venture, in the name of its designated lead entity, who shall sign the contract for and on behalf of all the member entities.

20. Alternative Bid

Unless otherwise specified in the **Data Sheet** (DS nos. 5 and 6), alternative bid shall not be considered. Where the conditions for its acceptance are met, or justifications are clearly established, UNDP reserves the right to award a contract based on an alternative bid.

21. Validity Period

- 21.1 Bid shall remain valid for the period specified in the **Data Sheet** (DS no. 8), commencing on the submission deadline date also indicated in the **Data Sheet** (DS no. 21). A Bid valid for a shorter period shall be immediately rejected by UNDP and rendered non-responsive.
- 21.2 In exceptional circumstances, prior to the expiration of the Bid validity period, UNDP may request Bidders to extend the period of validity of their Bid. The request and the responses shall be made in writing, and shall be considered integral to the Bid.

22. Bidder's Conference

When appropriate, a Bidder's conference will be conducted at the date, time and location specified in the **Data Sheet** (DS no. 7). All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be either posted on the UNDP website, or disseminated to the individual firms who have registered or expressed interest with the contract, whether or not they attended the conference. No verbal statement made during the conference shall modify the terms and conditions of the ITB unless such statement is specifically written in the Minutes of the Conference, or issued/posted as an amendment in the form of a Supplemental Information to the ITB.

D. SUBMISSION AND OPENING OF BID

23. Submission

23.1 The Technical Bid and the Price Schedule **must be submitted together and sealed together in one and the same envelope**, delivered either personally, by courier, or by electronic method of transmission. If submission will not be done by electronic means, the Technical Bid and Price Schedule must be sealed together in an envelope whose external side must :

- a) Bear the name of the Bidder;
- b) Be addressed to UNDP as specified in the **Data Sheet** (DS no.20); and
- c) Bear a warning not to open before the time and date for Bid opening as specified in the **Data Sheet** (DS no. 24).

If the envelope is not sealed nor labeled as required, the Bidder shall assume the responsibility for the misplacement or premature opening of Bid due to improper sealing and labeling by the Bidder.

23.2 Bidders must submit their Bid in the manner specified in the **Data Sheet** (DS nos. 22 and 23). When the Bid is expected to be in transit for more than 24 hours, the Bidder must ensure that sufficient lead time has been provided in order to comply with UNDP's deadline for submission. UNDP shall indicate for its record that the official date and time of receiving the Bid is the actual date and time when the said Bid has physically arrived at the UNDP premises indicated in the **Data Sheet** (DS no. 20).

23.3 Bidders submitting Bid by mail or by hand shall enclose the original and each copy of the Bid, in separate sealed envelopes, duly marking each of the envelopes as "Original Bid" and the others as "Copy of Bid". The two envelopes, consisting of original and copies, shall then be sealed in an outer envelope. The number of copies required shall be as specified in the **Data Sheet** (DS no. 19). In the event of any discrepancy between the contents of the "Original Bid" and the "Copy of Bid", the contents of the original shall govern. The original version of the Bid shall be signed or initialed by the Bidder or person(s) duly authorized to commit the Bidder on every page. The authorization shall be communicated through a document evidencing such authorization issued by the highest official of the firm, or a

Power of Attorney, accompanying the Bid.

- 23.4 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder accepts the General Contract Terms and Conditions of UNDP as attached hereto as Section 11.

24. Deadline for Submission of Bid and Late Bids

Bid must be received by UNDP at the address and no later than the date and time specified in the **Data Sheet** (DS no. 20 and 21).

UNDP shall not consider any Bid that arrives after the deadline for submission of Bid. Any Bid received by UNDP after the deadline for submission of Bid shall be declared late, rejected, and returned unopened to the Bidder.

25. Withdrawal, Substitution, and Modification of Bid

- 25.1 Bidders are expected to have sole responsibility for taking steps to carefully examine in detail the full consistency of its Bid to the requirements of the ITB, keeping in mind that material deficiencies in providing information requested by UNDP, or lack clarity in the description of goods and related services to be provided, may result in the rejection of the Bid. The Bidder shall assume any responsibility regarding erroneous interpretations or conclusions made by the Bidder in the course of understanding the ITB out of the set of information furnished by UNDP.
- 25.2 A Bidder may withdraw, substitute or modify its Bid after it has been submitted by sending a written notice in accordance with ITB Clause 23, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be received by UNDP prior to the deadline for submission and submitted in accordance with ITB Clause 23 (except that withdrawal notices do not require copies). The respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION".
- 25.3 Bid requested to be withdrawn shall be returned unopened to the Bidders.
- 25.4 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bid and the expiration of the period of Bid validity specified by the Bidder on the Bid Submission Form or any extension thereof.

26. Bid Opening

UNDP will open the Bid in the presence of an ad-hoc committee formed by UNDP of at least two (2) members. If electronic submission is permitted, any specific electronic Bid opening procedures shall be as specified in the **Data Sheet** (DS no. 23).

The Bidders' names, modifications, withdrawals, the condition of the envelope labels/seals, the

number of folders/files and all other such other details as UNDP may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submission, for which the Bid shall be returned unopened to the Bidder.

27. Confidentiality

Information relating to the examination, evaluation, and comparison of Bid, and the recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process, even after publication of the contract award.

Any effort by a Bidder to influence UNDP in the examination, evaluation and comparison of the Bid or contract award decisions may, at UNDP's decision, result in the rejection of its Bid.

In the event that a Bidder is unsuccessful, the Bidder may seek a meeting with UNDP for a debriefing. The purpose of the debriefing is discussing the strengths and weaknesses of the Bidder's submission, in order to assist the Bidder in improving the bid presented to UNDP. The content of other bid and how they compare to the Bidder's submission shall not be discussed.

E. EVALUATION OF BID

28. Preliminary Examination of Bid

UNDP shall examine the Bid to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, whether or not the Bidder is in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNDP's list of suspended and removed vendors, and whether the Bid are generally in order, among other indicators that may be used at this stage. UNDP may reject any Bid at this stage.

29. Evaluation of Bid

29.1 UNDP shall examine the Bid to confirm that all terms and conditions under the UNDP General Terms and Conditions and Special Conditions have been accepted by the Bidder without any deviation or reservation.

29.2 The evaluation team shall review and evaluate the Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the **Data Sheet** (DS No. 25). Absolutely no changes may be made by UNDP in the criteria after all Bids have been received.

29.1 UNDP reserves the right to undertake a post-qualification exercise, aimed at determining, to its satisfaction the validity of the information provided by the Bidder. Such post-qualification shall be fully documented and, among those that may be listed in the **Data Sheet** (DS No.33), may include, but need not be limited to, all or any combination of the following :

- a) Verification of accuracy, correctness and authenticity of the information provided by the

- bidder on the legal, technical and financial documents submitted;
- b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team;
 - c) Inquiry and reference checking with Government entities with jurisdiction on the bidder, or any other entity that may have done business with the bidder;
 - d) Inquiry and reference checking with other previous clients on the quality of performance on on-going or previous contracts completed;
 - e) Physical inspection of the bidder's plant, factory, branches or other places where business transpires, with or without notice to the bidder;
 - f) Testing and sampling of completed goods similar to the requirements of UNDP, where available; and
 - g) Other means that UNDP may deem appropriate, at any stage within the selection process, prior to awarding the contract.

30. Clarification of Bid

To assist in the examination, evaluation and comparison of bids, UNDP may, at its discretion, ask any Bidder to clarify its Bid.

UNDP's request for clarification and the Bidder's response shall be in writing. Notwithstanding the written communication, no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNDP in the evaluation of the Bid, in accordance with ITB Clause 35.

Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by UNDP, shall not be considered during the review and evaluation of the Bid.

31. Responsiveness of Bid

UNDP's determination of a Bid's responsiveness will be based on the contents of the Bid itself.

A substantially responsive Bid is one that conforms to all the terms, conditions, and specifications of the ITB without material deviation, reservation, or omission.

If a Bid is not substantially responsive, it shall be rejected by UNDP and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.

32. Nonconformities, Repairable Errors and Omissions

32.3 Provided that a Bid is substantially responsive, UNDP may waive any non-conformities or omissions in the Bid that, in the opinion of UNDP, do not constitute a material deviation.

32.4 Provided that a Bid is substantially responsive, UNDP may request the Bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

32.5 Provided that the Bid is substantially responsive, UNDP shall correct arithmetical errors as follows:

- a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of UNDP there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
- b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to the above.

32.6 If the Bidder does not accept the correction of errors made by UNDP, its Bid shall be rejected.

F. AWARD OF CONTRACT

33. Right to Accept, Reject, or Render Non-Responsive Any or All Bid

33.1 UNDP reserves the right to accept or reject any Bid, to render any or all of the Bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNDP's action. Furthermore, UNDP is not obligated to award the contract to the lowest price offer.

33.2 UNDP shall also verify, and immediately reject their respective Bid, if the Bidders are found to appear in the UN's Consolidated List of Individuals and Entities with Association to Terrorist Organizations, in the List of Vendors Suspended or Removed from the UN Secretariat Procurement Division Vendor Roster, the UN Ineligibility List, and other such lists that as may be established or recognized by UNDP policy on Vendor Sanctions. (See http://www.undp.org/content/undp/en/home/operations/procurement/procurement_protest/)

34. Award Criteria

Prior to expiration of the period of Bid validity, UNDP shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification, and has offered the lowest price (See DS No. 32).

35. Right to Vary Requirements at the Time of Award

At the time of award of Contract, UNDP reserves the right to vary the quantity of the goods and/or related services, by up to a maximum twenty five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.

36. Contract Signature

Within fifteen (15) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to UNDP.

Failure of the successful Bidder to comply with the requirement of ITB Section F.3 and this provision shall constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security if any, and on which event, UNDP may award the Contract to the Bidder with the second highest rated Bid, or call for new Bid.

37. Performance Security

A performance security, if required, shall be provided in the amount and form provided in Section 9 and by the deadline indicated in the **Data Sheet** (DS no. 14), as applicable. Where a Performance Security will be required, the submission of the said document, and the confirmation of its acceptance by UNDP, shall be a condition for the effectivity of the Contract that will be signed by and between the successful Bidder and UNDP.

38. Bank Guarantee for Advanced Payment

Except when the interests of UNDP so require, it is the UNDP's preference to make no advanced payment(s) on contracts (i.e., payments without having received any outputs). In the event that the Bidder requires an advanced payment upon contract signature, and if such request is duly accepted by UNDP, and the said advanced payment exceeds 20% of the total Bid price, or exceed the amount of USD 30,000, UNDP shall require the Bidder to submit a Bank Guarantee in the same amount as the advanced payment. A bank guarantee for advanced payment shall be furnished in the form provided in Section 10.

39. Vendor Protest

UNDP's vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a purchase order or contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNDP vendor protest procedures:
<http://www.undp.org/procurement/protest.shtml>

Instructions to Bidders

DATA SHEET

The following data for the supply of goods and related services shall complement / supplement the provisions in the Instruction to Bidders. In the case of a conflict between the Instruction to Bidders and the Data Sheet, the provisions in the Data Sheet shall prevail.

DS No.	Cross Ref. to Instructions	Data	Specific Instructions / Requirements
1		Project Title:	The Integrated Solid Waste Management for Baalbek Caza
2		Title of Goods/Services/Work Required:	Delivery, Installation, and Commissioning of the bioenergy co-generator for the successful operation of the Baalbek biogas production plant in Baalbek, Bekaa, Lebanon
3		Country:	Lebanon
4	C.13	Language of the Bid:	<input checked="" type="checkbox"/> English
5	C.20	Conditions for Submitting Bid for Parts or sub-parts of the Total Requirements	<input checked="" type="checkbox"/> Not allowed
6	C.20	Conditions for Submitting Alternative Bid	<input checked="" type="checkbox"/> Shall not be considered
7	C.22	A pre-Bid conference will be held on:	<input checked="" type="checkbox"/> Not Applicable
8	C.21.1	Period of Bid Validity commencing on the submission date	<input checked="" type="checkbox"/> 120 days
9	B.9.5 C.15.4 b)	Bid Security	<input checked="" type="checkbox"/> Required Amount: US\$ 9,650.00 Form: See Enclosed Section 8 – Form for Bid Security
10	B.9.5	Acceptable forms of Bid Security	<input checked="" type="checkbox"/> Bank Guarantee (See Section 8 for template)
11	B.9.5	Validity of Bid Security	150 days from the last day of Bid submission.

	C.15.4 a)		Bid Security of unsuccessful Bidders shall be returned.
12		Advanced Payment upon signing of contract	<input checked="" type="checkbox"/> Not allowed
13		Liquidated Damages	<input checked="" type="checkbox"/> Will be imposed under the following conditions: Percentage of contract price per day of delay: 0.5% Max. no. of days of delay : One (1) month Next course of action : Termination of Purchase Order
14	F.37	Performance Security	<input checked="" type="checkbox"/> Required Amount : 10% of Purchase Order Value Form: See Enclosed Section 9 – Form for Performance Security
15	C.17 C.17.2	Preferred Currency of Bid and Method for Currency conversion	<input checked="" type="checkbox"/> United States Dollars (US\$) <i>Reference date for determining UN Operational Exchange Rate : 18 June 2015</i>
16	B.10.1	Deadline for submitting requests for clarifications/ questions	Five (5) working days before the submission date.
17	B.10.1	Contact Details for submitting clarifications/questions ¹	Focal Person in UNDP: Procurement Unit Address: Room # 310, 3rd Floor Arab African International Bank Building Riad El Solh Street Nejmeh, Beirut 2011 5211, Lebanon Fax No. : +961 1 962 491 E-mail address dedicated for this purpose: procurement.lb@undp.org
18	B.11.1	Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries	<input checked="" type="checkbox"/> Direct communication to prospective Bidders by email and posting on the websites: www.lb.undp.org, www.ungm.org and www.undp.org
19	D.23.3	No. of copies of Bid that must	Original: One

¹ This contact person and address is officially designated by UNDP. If inquiries are sent to other person/s or address/es, even if they are UNDP staff, UNDP shall have no obligation to respond nor can UNDP confirm that the query was officially received.

		be submitted	Copies : One
20	D.23.1 b) D.23.2 D.24	Bid submission address	Procurement Unit, UNDP Lebanon Room # 310, 3rd Floor Arab African International Bank Building Riad El Solh Street Nejmeh, Beirut 2011 5211, Lebanon
21	C.21.1 D.24	Deadline of Bid Submission	Date and Time : June 18, 2015 2:00 PM Beirut Local Time
22	D.23.2	Manner of Submitting Bid	<input checked="" type="checkbox"/> Courier/Hand Delivery
23	D.23.2 D.26	Conditions and Procedures for electronic submission and opening, if allowed	Not Allowed
24	D.23.1 c)	Date, time and venue for public opening of Bid	Date and Time: June 18, 2015 2:15 PM Venue : UNDP Lebanon Country Office
25		Evaluation method to be used in selecting the most responsive Bid	<input checked="" type="checkbox"/> Non-Discretionary “Pass/Fail” Criteria on the Scope of Works; and <input checked="" type="checkbox"/> Lowest price offer of technically qualified/responsive Bid
26	C.15.1	Required Documents that must be Submitted to Establish Qualification of Bidders (In “Certified True Copy” form only)	<input checked="" type="checkbox"/> Company Profile, which should <u>not</u> exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods/services being procured <input checked="" type="checkbox"/> Members of the Governing Board and their Designations duly certified by the Corporate Secretary, or its equivalent document if Bidder is not a corporation <input checked="" type="checkbox"/> Tax Registration/Payment Certificate issued by the Internal Revenue Authority evidencing that the Bidder is updated with its tax payment obligations, or Certificate of Tax exemption, if any such privilege is enjoyed by the Bidder <input checked="" type="checkbox"/> Certificate of Registration of the business, including Articles of Incorporation, or equivalent document if Bidder is not a corporation <input checked="" type="checkbox"/> Trade name registration papers, if applicable <input checked="" type="checkbox"/> Local Government permit to locate and operate in the current location of office or factory ;

			<input checked="" type="checkbox"/> Official Letter of Appointment as local representative, if Bidder is submitting a Bid in behalf of an entity located outside the country <input checked="" type="checkbox"/> Quality Certificate (e.g., ISO, etc.) and/or other similar certificates, accreditations, awards and citations received by the Bidder, if any <input checked="" type="checkbox"/> Plan and details of manufacturing capacity, if Bidder is a manufacturer of the goods to be supplied <input checked="" type="checkbox"/> Certification or authorization to act as Agent in behalf of the Manufacturer, or Power of Attorney, if bidder is not a manufacturer <input checked="" type="checkbox"/> Latest Audited Financial Statement (Income Statement and Balance Sheet) including Auditor's Report for the past two (2) years <input checked="" type="checkbox"/> Statement of Satisfactory Performance from the Top Five (5) Clients in terms of Contract Value the past three (3) years <input checked="" type="checkbox"/> All information regarding any past and current litigation during the last five (5) years, in which the bidder is involved, indicating the parties concerned, the subject of the litigation, the amounts involved, and the final resolution if already concluded.
27		Other documents that should be Submitted to Establish Eligibility	<ul style="list-style-type: none"> - VAT Registration Certificate (if applicable); - Time schedule for supply, transportation, installation, commissioning, documents and training; - Similar Projects reference list shows experience of the Offeror and also the availability of equipment of the same basic design and similar size to operate correctly in the indicated environmental and climatic conditions successfully for at least 5 years; - Proof that the Manufacturer of the goods has been active in the market for at least 5 years and has ISO 9001 quality management certificates; - Proof of after-sales service capacity and appropriateness of local service and technical support available; - Technical description of equipment complies with the requirements of performance of the ITB; - Statement of warranty of defects in materials and workmanship and operation and performance guarantee, backed by the manufacturers guarantee on the main components, meets or exceeds the required period;

			- CVs of the Key Staff (specialized engineers, technicians and/or skilled workers) proposed for the main tasks have the qualifications and experience in the installation, commissioning, and training.
28	C.15	Structure of the Technical Bid and List of Documents to be Submitted	See Section 2 - Instructions to Bidders, Clause 15
29	C.15.2	Latest Expected date for commencement of Contract	Upon Purchase Order Signature
30	C.15.2	Maximum Expected duration of contract	The overall term of execution of this purchase order is effective from purchase order signature date until four (4) months
31		UNDP will award the contract to:	<input checked="" type="checkbox"/> One Bidder only
32	F.34	Criteria for the Award and Evaluation of Bid	<p><u>Award Criteria</u></p> <p><input checked="" type="checkbox"/> Non-discretionary “Pass” or “Fail” rating on the detailed contents of the Scope of Works</p> <p><input checked="" type="checkbox"/> Compliance on the following qualification requirements:</p> <p><u>Bid Evaluation Criteria</u></p> <p><input checked="" type="checkbox"/> Demonstrated ability to honour important responsibilities and liabilities allocated to Supplier in this ITB (e.g. financial, performance guarantees, warranties, or insurance coverage, etc.);</p> <p><input checked="" type="checkbox"/> The time schedule for supply, transportation, installation, commissioning, documents and training complies with the deadlines set in the ITB;</p> <p><input checked="" type="checkbox"/> Similar Projects reference list shows experience of the Offeror and also the availability of equipment of the same basic design and similar size to operate correctly in the indicated environmental and climatic conditions successfully for at least 5 years;</p> <p><input checked="" type="checkbox"/> Proof that the Manufacturer of the goods has been active in the market for at least 5 years and has ISO 9001 quality management certificates;</p> <p><input checked="" type="checkbox"/> Proof of after-sales service capacity and appropriateness of local service and technical support available;</p>

			<input checked="" type="checkbox"/> The technical description of equipment complies with the requirements of performance of the ITB and all 4 parts of the ITB are met; <input checked="" type="checkbox"/> Data sheets, Catalogues and certificates of conformity for the main components meet or exceed the requirements of this ITB and relevant international performance standards; <input checked="" type="checkbox"/> Authorizations by the main goods' manufacturer to Bidder offering to supply the goods in the country of final destination. Required for every component of the system. Not required for goods which the Bidder manufacture; <input checked="" type="checkbox"/> The statement of warranty of defects in materials and workmanship and operation and performance guarantee, backed by the manufacturers guarantee on the main components, meets or exceeds the required period; <input checked="" type="checkbox"/> The CVs of the Key Staff (specialized engineers, technicians and/or skilled workers) proposed for the main tasks have the qualifications and experience in the installation, commissioning, and training.
33	E.29	Post qualification Actions	<input checked="" type="checkbox"/> Verification of accuracy, correctness and authenticity of the information provided by the bidder on the legal, technical and financial documents submitted; <input checked="" type="checkbox"/> Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; <input checked="" type="checkbox"/> Inquiry and reference checking with other previous clients on the quality of performance on ongoing or previous contracts completed.
34		Conditions for Determining Contract Effectivity	<input checked="" type="checkbox"/> UNDP's receipt of Performance Bond <input checked="" type="checkbox"/> Signature of Purchase Order by UNDP and the selected contractor
35		Other Information Related to the ITB	None

Section 3a: Scope of Works

THE PROCUREMENT OF BIOENERGY CO-GENERATOR

FOR

THE SUCCESSFUL OPERATION OF THE BAALBEK BIOGAS PRODUCTION PLANT

UNDER

THE INTEGRATED SOLID WASTE MANAGEMENT FOR BAALBEK CAZA PROJECT

1. BACKGROUND

Baalbek-Hermel Mohafazat includes more than 50 villages and houses more than 275,000 capita during the winter season, a value that increases to 500,000 capita during the summer season based on election population database available at the municipality of Baalbek (MEEA, 2011).

The area lacks the existence of a modern sanitary landfill. The bulk of the waste generated from the different towns and villages of the Cazas of Baalbek and Hermel are disposed of in open dumps. The latter have been surveyed to count more than 50 MSW dumps (ELARD, 2011).

As far as the Municipality of Baalbek is concerned and since the early 1970s, the waste generated has been dumped in the hilly Kayal site within two of the quarry sites that were exploited by the Romans as sources of stones for building their temples and monuments. Until the year 2010, the deposited waste was regularly burnt in open air, an activity that was banned by the municipality.

In the context of the 2006 national SWM plan, the union of municipalities of Baalbek (UMB), including a total of 33 municipalities, joined efforts to come up with a master plan for developing an ISWM system. At the short-term, the system is intended to serve the villages of the UMB. At the long-term, it is assumed that the system components should be capable of handling all the waste generated from the different municipalities of the Cazas of Baalbek and Hermel. The components proposed as part of the planned system include:

- A Sorting and Composting facilities managed by the Office of the Minister of State for Administrative Reform (OMSAR) and funded by the European Union (EU);
- A Biogas Production Plant executed by COSV through EU funding;
- An Engineered Sanitary Landfill executed by the UNDP through Italian Cooperation (IC) funding.

In addition, the proposed system includes such supporting facilities as administration building, a weighbridge, a control room, etc.

Given the complexity of the issue and the fact that the Baalbek municipality was in urgent need for a solution for its SWM issue especially with the significant amounts of additional solid waste associated with the Syrian refugees in that area, the Ministry of Environment (MoE) with UNDP undertook, through

PROGES, the preparation of a revised Master Plan for the Integrated Solid Waste Management (ISWM) in Baalbek and Hermel cazas.

The Master Plan assessed the quantities of waste produced in relation to the recently increased population (because of Syrian refugees) and its composition; it also addressed the existing infrastructure of MSW collection and transport. In essence, the Master plan tackled the needs of the different elements of the ISWM facilities (the sorting/composting facilities, the Biogas facility, and the sanitary landfill); in addition to the expected running cost of the various components.

The outcomes and recommendations of the Master Plan resulted in the redistribution of roles and scopes among the partners depending on the priorities identified and the availability of funds. The Ministry of Environment (MoE) through UNDP will now be implementing the secondary collection system, in addition to the setting up of the needed infrastructure and capacity building at the municipality, instead of the construction of the sanitary landfill cells, which will be undertaken by OMSAR with funds from the EU. A bioenergy co-generator, for the proper operation of the biogas production plant will be procured through UNDP.

The direct beneficiaries of the project are the MoE, the union of municipalities of Baalbek, and the inhabitants of the caza of Baalbek. Total population benefiting is over 170,000 inhabitants (around 70,000 Syrian refugees). Indirect benefits will extend to the national level given that environmental benefits affect all citizens of the country.

2. DESCRIPTION OF THE BIOGAS PLANT IMPLEMENTED IN BAALBEK

The Baalbek Biogas plant, part of which has already been constructed, uses the process of Anaerobic Digestion (AD) to produce biogas from the organic waste fraction of the municipal solid waste received at the Baalbek waste sorting facility. The generated biogas will be used to fuel a co-generation system which is expected to produce heat and electricity to power the solid waste compound.

2.1 Basics of Anaerobic Digestion

In general, anaerobic digestion is a biological process whereby mesophilic (34°C to 37°C) or thermophilic (49°C to 57°C) microorganisms break down organic matter under anaerobic conditions to produce:

- Leachate in liquid form which can be treated on-site or sent to a treatment facility;
- Digestate in solid form which can be dried and used as soil conditioner in agriculture or as additive to compost;
- Biogas which is mainly composed of Methane (CH₄) and Carbon Dioxide (CO₂). Thanks to its high methane content, the biogas can be used as fuel to generate heat, electricity or both at the same time.

A Combined Heat and Power (CHP) plant consists of a gas co-generation system which includes a

combustion engine and heat exchanging units to produce electrical power and recover the generated heat. The electricity can be used to power the facility itself or to supply the national grid while the recovered heat can be used to raise the temperature of the digester and, if applicable, for heating office buildings or for district heating.

2.2. Anaerobic Digestion and Combined Heat and Power for the Municipality of Baalbek

An anaerobic digestion plant with Combined Heat and Power (CHP) generation has been partially constructed in the vicinity of the solid waste treatment and composting facilities of Baalbek Municipality. The plants operate on the basis of dry-anaerobic digestion using mesophilic microorganisms and consist of two bio-cells (Bio-cell A and Bio-cell B) as shown in Drawing BBP-01 of Appendix 1.

Figure 1 below illustrates, in the form of a single line diagram, the materials and energy flows between the various components of the plant. It is to be noted that the diagram is limited to presenting the flows of products that are of relevance to the procurement of the co-generator.

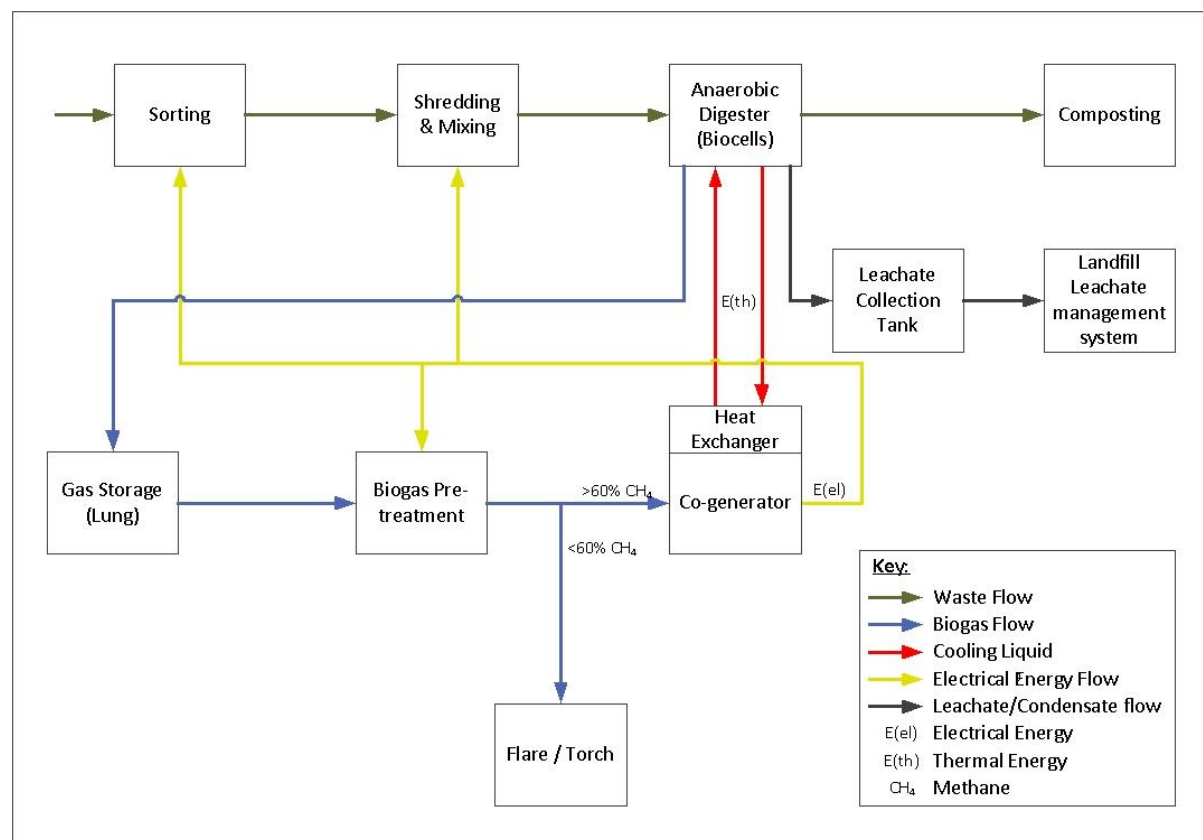


Figure 1. Flow Diagram of the Baalbek Waste Compound

In terms of process description, one can easily distinguish the following main sub-processes in the plant as follows:

- The organic waste digestion;
- The biogas production, storage and pretreatment;
- The thermal energy and heat exchange system;
- The electrical Energy production system.

A brief description of the above is presented in the below table:

Table 1. Brief Process Description

No	Sub-Process	Brief Description
1.	The organic waste digestion	<ul style="list-style-type: none"> ▪ The mixed municipal solid waste is received at the sorting and screening facility where the non-organic fraction is recovered; ▪ The remaining organic fraction then undergoes shredding and mixing to optimize the efficiency of the digestion process; ▪ Once received at the digester, the organic materials undergo anaerobic digestion to transform into what is called the digestate (a composting additive) while producing biogas and leachate; ▪ While the biogas will be used as generator fuel to generate electricity and heat, the leachate, on the other hand, will be partially used to cool the co-generators. The rest of the leachate will be managed with the leachate generated from the nearby landfill site.
2.	The biogas production, storage and pretreatment	<ul style="list-style-type: none"> ▪ The biogas generated from the biodegradation of the organic fraction of the waste is stored in the gas lung; the latter acts as a buffer to ensure a steady supply of gas to the generator when the gas generation upstream is low; ▪ Additional gas, produced by the fermentation of the leachate in the leachate collection tank, will also be transferred for storage in the lung; ▪ The stored generated biogas contains water vapor and sulfur which reduces the efficiency of the generator and is usually associated with the emission of air polluting compounds in the exhaust; ▪ That is why the plant integrates a biogas pretreatment unit where the gas undergoes drying and desulfurization; ▪ Following the pretreatment, a gas analyzer, already installed on site, measures the gas composition to determine its methane content. This activates a set of mechanical valves that direct the gas to: <ul style="list-style-type: none"> - A flare, which is also already installed, if the methane content is below 60%; or - The co-generation system if the methane content is equal to or higher than 60%. ▪ The co-generation system consists of a gas generator which produces electrical energy as its main output, but also thermal energy as one of its by-products; ▪ The flow of biogas generated by the plant is represented in blue in Figure 1 and in Drawing BBP-06 Gas Flow Layout (Appendix 1).

No	Sub-Process	Brief Description
3.	The thermal energy and heat exchange system	<ul style="list-style-type: none"> ▪ The thermal energy will be recovered and used to raise the temperature of the bio-cells to the level required by the mesophilic microorganisms; ▪ The heat recovery system implemented in the plant consists of the co-generators liquid cooling circuit, the heat exchanger, and a piping network extending to the bio-cells, represented in red in Figure 1; ▪ The layout of this system is also illustrated in Drawing BBP-07 Heating Layout which shows two generator cooling circuits: <ul style="list-style-type: none"> - The heat recovery system described above and consisting of a closed loop circuit that will transfer the recovered heat to the bio-cells; - A second circuit in which leachate from the leachate collection tank is used to cool down the co-generators.
4.	The electrical Energy production system	<ul style="list-style-type: none"> ▪ The electrical energy produced by the generator will be connected to the main electrical board of the waste sorting and composting facility.

The location of the co-generators and pre-treatment unit as shown in the drawings included in Appendix 1 is of indicative nature.

2.3 Current Status of the Biogas Plant

As mentioned earlier, the major components of the biogas plant have already been constructed and installed on site. The general layout of the biogas plant is shown in the below Picture 1.



Picture 1. Baalbek biogas co-generation plant

2.3.1 On site Existing Biogas Plant Components

The following components are present on site. For more details regarding the existing biogas plant components, refer to the drawings included in Appendix 2.

Table 2. On site Available Components of the Biogas Plant

No	Component Description
1.	The Bio-digester building incorporating the bio-cells, the waste pretreatment area, the associated engineering systems (electrical, mechanical, etc.).
2.	The main Biogas Piping network including the condensate drain drip trap: <ul style="list-style-type: none">▪ From the bio-cells to the lung;▪ From the leachate collection tank to the lung;▪ From the lung to the flare;▪ From the Lung to the provisional location for the co-generators (Picture 2) and the biogas pre-treatment.
3.	The gas lung for the storage of the generated biogas as shown in Picture 3 below.
4.	A gas analyzer as shown in Picture 4
5.	The gas flare already shown in Picture 1.
6.	The leachate collection tank and all the related components (i.e. submerged pumps, pumps controls, piping, electrical network, etc.);
7.	The two heating circulation pumps and the expansion tank.
8.	The heating and cooling main piping networks: <ul style="list-style-type: none">▪ From the leachate collection tank up to the provisional location of the co-generators as shown in Picture 2;▪ From the bio-cells to the pump.
9.	The electrical distribution network from the main distribution board to the different operating units of the plant.



Picture 2. Existing biogas piping system



Picture 3. Biogas existing lung



Picture 4. Existing Gas Analyzer

2.3.2 Missing Biogas Plant Components

The below listed components should be procured in order for the biogas plant to operate

efficiently:

- Biogas Co-generator/s including soundproofing containers, control panels, monitoring and protection accessories, synchronizing panel, totalizing panel, etc.
- A biogas pretreatment unit for drying and removal of sulfur as well as other contaminants from the gas;
- The biogas piping network to connect the pretreatment unit and co-generator/s to the existing main biogas piping networks;
- The heating/cooling piping network to connect the co-generators to existing cooling and heating networks; and
- The electrical network connecting the co-generators to the waste sorting and composting plants main distribution board and the Automatic Transfer Switch to ensure a continuous supply of electricity from the power grid if the generators are not in operation.

An empty space has been reserved for the tentative location of the biogas pretreatment unit and the co-generator/s as shown in the drawings of Appendix 1. However, this location is to be confirmed by the bidder.

A Drawing is included in Appendix 2 to highlight the executed components of the plant versus the non-executed components which will have to be procured.

3. DELIVERY PERIOD

Within 4 months from Contract signature.

4. CUSTOMS AND TAXES

As the goods are being procured by UNDP and delivered to the Baalbek Municipality which is considered a local authority, they shall be exempt from any taxes, etc. UNDP will support in Custom clearance of the goods however all ensuing costs should be covered by the supplier.

5. BIOGAS GENERATORS & ASSOCIATED EQUIPMENT

PART 1 - GENERAL

1. SUMMARY

- A. The system will convert the biogas produced by the 2 cells of the bio-digester into electrical and thermal energy. The electrical energy produced from the gas engine generator will be

consumed by the various components of the waste treatment and composting facilities already constructed nearby. The thermal energy, on the other hand will be used for heating the floor of the bio cells. All labor, materials and equipment to furnish, install and place into perfect operation of a biogas power generation system in accordance with the current specifications, the contract documents as well as the manufacturer's drawings and installation instructions.

- B. The biogas co-generation system is composed of the following main components:
1. Two co-generators able to provide 100kW of net electrical power output each.
 2. Sound proof container;
 3. Blower and pre-treatment system;
 4. Piping networks for gas and heat recovery;
 5. Electrical cables to connect the generator to the main distribution board of the waste treatment compound.
- C. It is recommended that the Bidder visit the site and inspect the existing conditions before submitting his offer.

2. CODES, STANDARDS & CERTIFICATIONS

- A. The products should comply with the applicable European codes and standards or any other equivalent codes and standards for noise emission, safety, environmental emissions, manufacturing, etc. and shall be ATEX certified.

3. PROJECT CONDITIONS

- A. Generator's Operating Environmental Conditions:
1. Ambient Temperature: - 15 to 40 deg. C;
 2. Relative Humidity: 0 to 95 percent;
 3. Altitude: Sea level to 1200m;
 4. Biogas CH₄ content: ≥50%;
 5. Sulfur content: ≤400ppm;
 6. Gas heat value ≥5500kcal/Nm³ (23MJ/Nm³).

4. WARRANTY

- A. The manufacturer's and dealer's standard warranty for the Generator and associated equipment shall in no event be for a period of less than 1 year from the date of handing over of the system and shall include repair parts, labor, reasonable travel expense necessary for repairs at the jobsite, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair. Running hours shall not be a limiting factor for the system warranty by either the manufacturer or servicing dealer. Submittals received without written warranties as specified will be rejected in their entirety.

5. MAINTENANCE SERVICE

- A. Full-Maintenance Service: 12 months and shall be included the bidder price.
- B. Training for maintenance: the bidder should include in his price the conduction of a training program for 2-3 individuals nominated by the municipality for the regular maintenance of the biogas generator and associated equipment.
- C. Copies of training materials and instruction manuals for the maintenance and operation of the equipment should be provided in both Arabic and English language.

6. SPARE PARTS AVAILABILITY

- A. The generator set and associated equipment's supplier shall have sufficient parts inventory to maintain over the counter availability of at least 90% of any normal wear and tear parts (Belts, hoses, filters, turbines, pumps, safeties, regulators, injectors, gaskets).
- B. The generator set and associated equipment's supplier shall guarantee overnight 100% parts from the time an order is entered with the dealer.

7. SUBMITTALS

- A. Submit full technical data of equipment for approval including, but not limited to, the following:

1. Generator: Model Frame Insulation class Number of Leads Weight, total weight, rotor air flow at rated voltage efficiency at 0.8 power factor for: 50% load, 75% load, 100% load Fault current, 3 phase symmetrical Decrement curve.
 - a. Auxiliary Equipment - Specification or data sheets, including switchgear, spring type vibration isolators.
 - b. Drawings.
 - c. Wiring Diagrams.
 - d. Warranty Statements.
 - e. Service Location and description of supplier's parts and service facility including parts inventory and number of qualified generator set service personnel.
2. Electromechanical network technical data sheet for:
 - a. Blower & pre-treatment.
 - b. Piping networks.
 - c. Sound proof container.
 - d. Totalizing panel.
 - e. Automatic transfer switches (ATS).
3. Field quality control test reports.
4. Operation and Maintenance Data.
5. Warranty certificate.

PART 2 - EQUIPMENT & ACCESSORIES

1. BIOGAS GENERATOR

A. Engine Type

1. The biogas generator shall be rated for prime power service at 125KVA, 0.8 PF, 380/220 V, three phase, wire, 50 Hz, 1500 rpm Performance.
2. The biogas generator shall be capable of withstanding a three phase load of 300% rated current for 10 seconds, and sustaining 150% of continuous load current for 2 minutes with field set for normal rated load excitation.
3. It shall exhibit less than 5% waveform deviation at no load.

4. Compression-ignition type with direct solid-injection, turbo-charged, water cooled, with air-cooled radiator, 4-stroke cycle, in-line or V-type cylinder arrangement, 1500 rpm, operating on bio gas, suitable for direct coupling to driven machine. Flywheel shall be suitably sized for type of service and constraints specified, and capable of being rotated at 125% of rated speed without failure. Torsional vibration dampers shall be provided.

B. Engine Rating

1. Shall be such that alternator can deliver net specified continuous rated output, shall withstand 10% overload for one hour in any period of twelve hours continuous operation at full load, with temperature rise not exceeding rise allowed by the Standards.

C. Accessibility

It shall be possible to:

1. Remove rocker-box covers without disturbing gas injection pipes or other components,
2. Remove and replace pistons and piston rods, liners, big and small end shells and caps without dismounting engine,
3. Bar engine over by hand for spill timing check and adjustment.

D. Measuring Instruments

Engine mounted instruments shall include, at least, water temperature gauge, lubricating oil temperature gauge and pressure gauge, tachometer and running time meter. It shall be possible to measure, with extra instrumentation, coolant temperature at lower end of radiator, air depression after air filter, air boost and temperature using methods recommended by manufacturer. Instrument accesses shall be normally sealed by threaded blanking caps.

E. Cooling system

The engine cooling system will be used to transfer the recovered heat to the bio-cells and should therefore be connected to the piping network in question; it shall additionally comprise for each engine a set mounted radiator, with electrically driven radiator fan, capable of dissipating the required amount of heat from the engine jacket cooling water

and engine lubricating oil cooler and charge air cooler cooling water each in a separate section of the radiator in ambient temperature of 52 degree C. The engine cooling system, in addition to the radiator, engine driven jacket water pump and air cooler and lubricating oil cooler water pump shall comprise but not necessarily be limited to, the following:

1. Thermostatic diversion valve of the direct acting type to control engine cooling water temperature. The valve shall be of design that under normal operating conditions the by-pass part is not fully closed,
2. Complete cooling water piping, circulation pump and valves for interconnections between the make-up/expansion tank and radiator, between radiator and engine and between charge air cooler and lubricating oil cooler and radiator,
3. Set of cooling water flexible connections to charge air cooler, lube oil cooler, engine and radiator,
4. Electric flow indicators for jacket water and charge air cooler.

F. Cylinders

It shall have removable liners. Wet type liners shall have witness hole between liner sealing rings of each cylinder for early detection of coolant or oil leakage. Each cylinder shall have drilled and tapped hole and valve for connections of pressure indicator.

G. Exhaust System

It shall be complete with flanged, bolted, galvanized, seamless steel pipe sections, long sweep elbows, flexible expansion sections, clean-outs, residential silencer, wall thimbles and supporting steelwork. Silencer shall be independently supported. Hot exhaust parts shall be insulated with asbestos tape, not less than 10 mm thick, with anti-condensation overlap and sheet metal covers to protect insulation. Exhaust system shall be designed to reduce back pressure to below maximum specified by the manufacturer, in relation to exhaust pipe length and inner diameter.

H. Electrical Starting System

Engine starting shall be manual by push-button or automatic through control system at control panel. System shall consist of heavy duty 24V DC starter motor, heavy duty battery and battery charger. Starting pinion shall automatically disengage when engine fires.

I. Storage Battery

Lead-acid, sealed-in-plastic type, complete with battery rack and inter cell connectors. Battery shall have sufficient capacity to provide minimum four cranking periods.

J. Battery Charger

It shall be 25% over-rated, solid state, full-wave rectifier type, adequate to fully recharge depleted battery in not more than 8 hours and to automatically control rate of charge (providing a high-charge rate to a depleted battery and reducing to a trickle-charge rate when battery is fully charged). Ammeter shall be provided to indicate charging rate, which shall be adjustable.

K. Electronic Governor

It shall provide isochronous governing, paralleling and load sharing of generator sets. Governor shall have zero percent (isochronous) setting and adjustable droop from zero percent to 10% droop. System shall include power supply unit, magnetic speed pick-up, control module and actuator using fast response DC motor drive or equally approved alternative. Governor shall be designed for fast-response and high-precision of speed (frequency) control, automatic paralleling and load-sharing and shall include speed adjustment to $\pm 5\%$ of normal, while running, and with remote control interface. Frequency deviation under 25% sudden load change shall not exceed 0.5 Hz, recovering to stable speed condition of ± 0.1 Hz in 0.5 seconds.

L. Governor Over-speed Trip

It shall automatically close gas valve racks in event of engine over-speed.

M. Protective System

It shall comprise automatic engine shut-down and generator trip with visual and audible alarm in event of over-speed, low lubricating oil pressure, high cooling water temperature and over cranking.

2. ALTERNATOR

A. Type

Synchronous, low reactance, high efficiency, revolving field type, with brushless exciter and flexible coupling, sized to pick up effective load without exceeding transient and steady-state voltage deviation limits specified up to its full nominal rating and designed for the performance stipulated in the Specifications.

B. Leads and Cables

Phase leads shall be brought out fully insulated to a terminal cable box of heavy gauge sheet steel; Control and protection cables are to be brought out to a separate terminal box.

C. Maximum Voltage Difference

Between the three phases at 100% balanced load shall not exceed 1%. With unbalanced load up to 30% on one phase at unity power factor and zero load on other phases, the line-to-neutral voltages are not to differ by more than 5%.

D. Characteristics

Number of phases	: 3
Rated voltage and frequency	: 220/380V, 50 Hz
Rated power factor	: 0.8
Winding connection	: Reconnect able with ends brought out and fully insulated
Unbalanced load current with none of the phase currents exceeding rated current	: 30% minimum
Overload	: 10% nameplate rating for 1 hour every 12 hours
Rotor	: Salient pole type, incorporating damping grid
Excitation	: Brushless, with rotating armature rectifiers and discharge resistors
Voltage regulator	: Automatic, with readily accessible controls for voltage level
Insulation	: Class H for stator class H for rotor and exciter
Enclosure	: Drip proof and screen protected (IP 23 to IEC 144)
Cooling	: Built-in centrifugal fans

E. Voltage Regulation

Overall voltage deviation within normal speed variations shall be within $\pm 2\%$ from no-load to full-load, from hot to cold and with load power factor from 0.8 lagging to unity. Regulator shall automatically reduce voltage if load exceeds capacity of generator. Voltage

build-up shall be positive and rapid even when full load is suddenly applied. Line-to-line voltage waveform deviation factor shall not exceed $\pm 5\%$. Total harmonic content shall not exceed 5% and that of one harmonic not to exceed 2%. Radio interference suppression shall be within the limits set by the Standards, grade (N).

F. Exciter

Armature shall be 3-phase, directly mounted to generator shaft and connected to generator field windings through six solid-state, hermetically sealed, silicon rectifiers, accessible for maintenance or repair. Exciter shall have field suppression system to eliminate any source of diode failure resulting from high inductive loads and surges. Exciter field windings shall be stationary. Exciter-regulator combination shall maintain output voltage within limits specified for any load up to 110% generator rating and under any sudden load changes specified.

G. Voltage Regulator

It shall be Solid state, volts/Hz type, utilizing silicon semi-conductor devices in control and power stages, with built-in electro-magnetic interference suppression and designed for single or parallel operation. Manual adjustment to $\pm 5\%$ of regulated voltage level shall be possible by a potentiometer at control panel. All components shall be sealed, moisture and heat resistant, with a suitable environmentally protected enclosure. Voltage regulator shall automatically reduce voltage if load exceeds capacity of generator and shall sustain a 3-phase short-circuit current at the generator terminals for the period for which the short-circuit protection operates and at least for 3 seconds. Voltage regulator power shall be supported by generator voltage and current to maintain excitation field power.

H. Two Position Switch

It shall be provided for selection of manual or automatic mode of regulated voltage control.

I. Sets Operating in Parallel

Cross-current compensation and necessary paralleling modules shall be provided to effect sharing of active and reactive loads equally between generators.

3. AUTO SYNCHRONIZER

- A. It shall be solid state, phase locking type, which will operate in conjunction with an electronic governor. The synchronizer will monitor the phase angle and frequency of the two systems to be paralleled. It will sense the difference between the two systems and

provide a correction signal to the electronic governor of the oncoming generator. The correction signal will cause the governor to increase or decrease the speed of the generator, as required, to attain synchronism. Once synchronized, the synchronizer will signal the generator circuit breaker to close. The synchronizer shall be set mounted and will meet the following specifications:

1. Input Power (oncoming & bus): 220 V, $\pm 10\%$, single phase 50 Hz
2. Breaker Closing Angle: ± 10 degree or greater, not exceeding ± 20 degree
3. Output Signal (To Governor): - 4 VDC to + 4 VDC
4. Breaker Closing Contact: SPDT, 7 Amp 220 VAC resistive, 1 A 120VDC resistive.

4. INSTRUMENTATION, PROTECTION AND CONTROL EQUIPMENT

A. Generating Set Instruments, Protection and Controls

Control relays, sensing equipment, switchgear protective relays and devices and start, stop and shutdown controls shall be provided as necessary for operation specified. Generating set, instruments, protection and controls shall be mounted preferably in one control cubicle.

B. Instruments and Controls

Shall include at least the following:

1. Voltmeter and 7-position selector switch;
2. Ammeters;
3. Frequency meter;
4. Off/test/manual/auto duty switch;
5. Manual start and stop push buttons;
6. Kilowatt-hour meter;
7. Service-hour running counter;
8. Potentiometer for voltage level control;
9. Speed raise/ lower device;
10. Cool-downtime setting controls;
11. LCD display showing at least low oil pressure, high water temperatures at all required parts, over-speed, fail to start, generator overload, reverse power, generator on load, battery low charge state;

12. Lamp test push-button;
13. Oil and fuel gauges and alarms;
14. Battery charger, on/off switch, pilot lights, DC ammeter;
15. Alarm sounder and reset controls;
16. Anti-condensation heater;
17. Synchronizing switch, two position, on-off, with keyed removable handle;
18. Generator failed to parallel.

C. Protective Gear

Shall ensure orderly engine stop or shutdown with reset relays, as required for safety and operational reliability to the satisfaction of the Engineer, and shall include but not limited to the following:

1. Output power circuit breaker with solid state trip unit, for over-current and external earth fault protection;
2. Over-voltage protection with voltage and time lag adjustment;
3. Loss-of-field protection;
4. Negative phase sequence protection.

D. Control and Protective Gear Cubicles

Generator set mounted instruments and/or control cubicles shall be resiliently mounted, preventing transmission of vibration to the components. Separately mounted instrument and control cubicles shall be self-supporting, floor mounted and freestanding. Cubicles shall be sheet steel construction, ventilated indoor type, vermin and dust-proof, with lockable hinged doors and instrument panels, separate compartments for control devices, protective relays, circuit breaker(s) and neutral earthing device. Inner and outer surfaces of steel enclosures shall be cleaned, phosphatized, primed with heavy-duty rust inhibiting primer and finished with two coats of enamel. Wiring shall be 600 V, modularly arranged, with connections made at front terminal blocks with no live conductors exposed. Wires shall have approved numbered ferrules at each terminal. Printed circuit plug-in boards, where applicable, are to be of industry standards, accessible and withdrawable, mounted in standard racks.

E. For Parallel Operation of Generator Sets

Provide the following:

1. Automatic synchronizing unit, automatic switching active and reactive load-sharing modules, as required for paralleling as specified, together with

sequential starting system based on demand load sensing, to allow automatic starting and transfer of load from one set to another without break in supply;

2. Semi-automatic paralleling facilities including single check synchronizer, auto-close attachment for circuit breaker, common bus bar and synchroscope to adjust speed of incoming generating set(s);
3. Neutral earthing switch, lockable in open and closed positions.

F. Relays

Front adjustable, sealed type, with dust-tight enclosures, removable covers, test terminal blocks and plugs for testing relay without removal from case. Removal from casing shall automatically short-circuit respective current transformer secondary windings.

G. Instruments

They shall be housed in enameled metal cases for switchboard flush installation, with scales and markings protected and sealed. Indicating meters shall be minimum 76 mm square. Accuracy shall be within 2% unless otherwise specified. Voltmeters and ammeters shall be moving iron type for AC measurements and moving coil type for DC measurements.

H. Current Transformers

Class 2 for measuring and protection

I. Voltage Transformers

Single phase, dry type, and 0.5 accuracy class

J. KWH Meter

3-element type for unbalanced 3-phase, 4-wire loads, fitted with 6-digit cyclometer

5. WEATHERPROOF SOUND ATTENUATING ENCLOSURE

- A. Enclosure shall be sound attenuating enclosure: the engine-generator set shall be factory enclosed in not less than a 12 gauge steel enclosure constructed with corner posts, uprights and headers. The roof shall aid in the runoff of water and include a drip edge. The

enclosure shall be coated with electrostatically applied paint, baked and finished to manufacturer's specifications. The enclosure shall be completely lined with not less than 1" thick, UL 94 HF-1 listed, sound deadening material. This material must be of a self-extinguishing design. The critical silencer shall be included to further reduce the unit sound level. The overall design must be such that sound level does not exceed 70dB (A) at 1 meter from each generator in case of the two generators are in operation condition.

- B. Exhaust silencer(s) shall be provided of the size as recommended by the manufacturer and shall be of critical grade to attenuate the sound to the level noted above. It shall be supplied with a flexible, seamless, stainless steel exhaust connection. A rain cap will be supplied to terminate the exhaust pipe. These components must be properly sized to assure operation without excessive back pressure when installed.

6. BIOGAS PRETREATMENT SYSTEM

- A. The biogas has to be properly pretreated and conditioned to reduce the main pollutants concentrations to minimum levels that are compatible with the generator's specifications. At minimum, this system shall include a desulfurization, de-humidifier and de-dust units in addition to any other pre-treatment that is deemed necessary for the proper and sound operation and performance of the generator.
- B. The biogas pretreatment unit shall be equipped with blowers to compensate for any head loss and keep a steady state pressure all through the operation of the system.

7. PIPING NETWORKS

- A. Two types of piping networks are already installed on site:
 - 1. Gas distribution network from the gas lung to the various components of the biogas generator system and associated equipment;
 - 2. Heat exchange network that is divided into two sub networks:
 - a. A closed loop network between the generator cooling system and the bio-cells.

- b. A network between the leachate collection tank and the generator cooling system.
- B. As part of the current bid, the bidder has to provide the connection between the bio gas generator units and its associated equipment with the existing gas and heat exchange networks.
- C. The piping connection to the existing network shall consist of the same material and color of the existing network as shown in the attached drawings and as summarized below:
 - 1. Connection to bio-cells heating system: green (Tropicana 709)
 - 2. Connection to the cooling system (connected to the leachate collection tank): orange (orange 777)
 - 3. Connection from the main gas network to the two co-generators: yellow (maple cream 706)
 - 4. Connections from the main gas network to the pretreatment unit and back to the main gas network: purple (purple wave 717)

8. LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

A. Summary

This section deals with installation of the necessary cables and wires to connect the generator to the main distribution board of the waste treatment compound for perfect operation in compliance with the existing site requirements and as thereunder specified.

This Section includes the following:

- 1. Power cables rated 0.6 /1kV and less.
- 2. Connectors, splices, and terminations rated 0.6/1 kV and less.
- 3. Sleeves and sleeve seals for cables.

B. Conductors & Cables

- 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Cables du Liban (Lebanon).

3. Conductor sizes are to be metric and compatible with the Generator load.
4. Conductor insulation: Types PVC and XLPE

9. EARTHING AND BONDING FOR ELECTRICAL SYSTEMS

A. General

1. This section deals with connection and/or maintenance of earthing continuity of electrical systems for perfect operating conditions to achieve the required resistivity comply with the existing site requirements and as thereunder specified.
2. This Section includes complete installation to earth every source of energy and to provide protective earthing and equipotential bonding based on the TN-S system arrangement including, but not limited to, the following:
 - Earthing terminal directly connected to the Generator.
 - Gas Co-generator neutral earthing.

B. Products

1. Conductors
 - Insulated Conductors: Copper wire and cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
 - Protective Conductors: Single core stranded annealed copper, PVC insulated cables, having rated insulation grade compatible with circuit protected, or to be a conductor forming part of a multi-core cable, color coded.
2. Earthing Electrodes
 - Earth Rods: Copper clad steel rod (comply with BS EN 50164-2), 16 mm diameter, 2.4 m length, extendible as necessary to obtain required earth resistance that should not exceed 5 Ohms. Earth rod is to be complete with couplings, head and bolted connector of sufficient size, and number of bolted clamps to connect all cables terminated thereto.
 - Chemical-Enhanced Earthing Electrodes: Copper tube, straight or L-shaped, charged with nonhazardous electrolytic chemical salts.
 - Buried Earth Conductors: Bare annealed copper strip conductors 25 x 3 mm, or annealed stranded copper conductors with minimum section

equal 70mm² or to the section of the largest earthing cable connected to the main earth base, whichever is bigger.

3. Earth Pit

Precast, square or circular section concrete hand-hole (minimum 450 mm internal diameter), with concrete cover, and extending to about 150 mm below top of earth rod. Earth pit is to be provided for each earth rod where connected to an earthing conductor. Cover is to have inset brass plate with inscription "Earth Pit # & Earth pit ID - Do Not Remove". Set top of earth pit flush with finished grade or floor. Earth pits to be permanently labeled for particular equipment

10. DISTRIBUTION BOARDS: (TOTALIZING PANEL)

A. Totalizing Panel: Branch panel boards with a motorized circuit breakers type and have rated service short circuit breaking capacities (sequence II) with suitably selected frame sizes and trip ranges to meet the electrical requirements of the biogas generators.

1. Generally: To have voltage rating 240 V, 400 V, A.C. maximum, and 250 V D.C. maximum, conforming to IEC 60439 and BS EN 60439: Part 1 Class 3.

B. Description

1. The specification hereunder shall be applied to totalizing panel boards, referenced on the load schedules. The distribution board shall be floor mounted, shall be provided with standard extension box to allow cable glanding if required.
2. Totalizing panel shall be provided with motorized circuit breaker type.
3. As a standard item, utilizing panel boards shall be provided with permanent circuit identification charts to the approval of the Engineer.

C. Enclosures

1. Totalizing panel boards should be floor mounted type; powder coated rustproof sheet steel units minimum 2 mm thick, complete with circuit breakers providing thermal overload and magnetic short-circuit and earth fault protection as per drawings. The enclosure protection to be IP 54, while the complete assembly shall comply with IEC 439-1.

D. Busbar

1. Type: One piece, 98 percent pure electrolytic high conductivity copper, tinned, based on total maximum operating temperature of 90 deg. C at any point of the bus, at full continuous rating. Bolted or clamped contact surfaces are to have maximum current density not exceeding requirements of the approved standards.
2. Rating: At least equal to main-circuit breaker frame size.
3. A final sub-circuit neutral assembly and an earthing bar assembly shall be available to facilitate the connection of neutral conductors and protective conductors respectively.

E. Breakers

1. Incoming breakers shall be motorized type and outgoing breakers shall be MCCBs of fixed type. Breaking capacity of the MCCBs shall be in line with the prospective fault level of the installation but shall not be less than fault level calculation.
2. The short circuit rating for the circuit breakers shall be 3x300AT/400AF unless otherwise required.
3. All circuit breakers shall be factory calibrated to ambient temperature of 55C°.

11. AUTOMATIC TRANSFER SWITCHES (ATS)

A. General

1. The Automatic Transfer Switch shall have the ratings, options, enclosures, etc., indicated on the drawings or noted herein. The Automatic Transfer Switch shall be fully rated to protect all types of loads, inductive and resistive, from loss of continuity of power. The switch shall afford complete protection. The switch shall be rated as suitable for all classes of loads without de-rating, either open or enclosed.
2. The transfer switch shall automatically transfer its load circuit to an emergency power supply (generators) from failure of its normal supply (EDL). Upon restoration of the normal supply, the transfer switch shall automatically retransfer its load circuits to the normal supply.

B. Description

1. The transfer switch shall be a mechanically held device utilizing two circuit breakers. Circuit breakers shall be high instantaneous trip. The breaker handles shall be operated by a common transfer mechanism to provide double throw switching action.
2. The common transfer mechanism shall be electrically operated by a single unidirectional gear motor, with all parts in positive contact at all times. It shall also be capable of being operated manually and shall have suitable provisions for readily disengaging the gear motor when so operated. The transfer switch shall be

mechanically and electrically interlocked so that a neutral position shall not be possible when under electrical operation. Nor shall it be possible for load circuits to be connected to normal and emergency sources simultaneously, regardless of whether switch is electrically or manually operated, or if any part should malfunction. The switch however, shall have a manual neutral position for ease of load circuit maintenance. Manual operation shall be able to be accomplished by one person.

PART 3 - INSTALLATION

1. EQUIPMENT BASES

- A. Ensure that concrete bases and foundations provided for installation of equipment are constructed in accordance with approved shop and construction drawings and equipment manufacturers' drawings and that holes for fixing bolts and provisions for passage of cables etc. are provided as required.

2. BUILT-IN ITEMS

- A. Ensure that equipment supports, fixings and the like, and sleeves for passage of feeders and cables which are to be built into concrete foundations, bases or building structure are provided as and when required and that they are properly installed.

3. TOOLS

- A. Use only tools recommended by equipment manufacturers for installations, particularly in making connections and adjustments.

4. SUPERVISION

- A. Inspect equipment upon delivery to Site and report any loss or damage to the Engineer. Installation shall be carried out under the direct supervision of a qualified technician, licensed by and trained at the factory. Final adjustments and putting into satisfactory operation shall be made by a specialist delegated by the manufacturer or supplier.

5. GENERATING SET

- A. Install to maintain alignment and minimize engine and generator stresses. Protect instrumentation and control equipment including engine-mounted instruments from machine vibration. Mountings and method of mounting shall be as recommended by the manufacturer and approved by the Engineer.

6. ENGINE EXHAUST PIPING

- A. Shall be slightly sloped away from engine to avoid condensation returning to engine and shall have drain plugs or clean-out at lower end as required.

7. TANK VENT PIPE

- A. Extend to nearest outside wall of building and carry up to at least 2 m above ground level with end at least 1 m away from any building opening. Slope vent pipe back to tank without traps and support securely. Provide replaceable dust filter and gooseneck bend or approved weatherproof vent cap at top of pipe.

8. PIPE HANGERS AND SUPPORTS

- A. Fasten securely to building structure with approved masonry expansion bolts, minimum 20 mm diameter and install in accordance with manufacturers' instructions.

9. EARTHING

- A. Install earthing system in accordance with the Specifications.

PART 4 - INSPECTION AND TESTS ON SITE

1. EQUIPMENT

- A. The awarded Contractor should inspect equipment upon delivery to Site and report any loss or damage to the UNDP Engineer.

2. EARTHING RESISTANCE TESTS

- A. The awarded Contractor should undertake earthing resistance tests in the presence of the UNDP Engineer to ensure the specified requirements are met.

3. LOAD TESTS

- A. The awarded Contractor should carry out load tests at low loads to overload conditions, at various power factors. Measurements shall include voltage and frequency deviations and regulating time under various step-loading conditions, temperature measurements and

pressure measurements at various locations, and in accordance with an approved plan under conditions equal to worst site ambient conditions.

4. TESTS

- A. The awarded Contract should undertake tests including but not be limited to the following:
 - 1. Full load test for 8 hours continuous, immediately followed by 10% overload test, without interruption,
 - 2. Insulation measurement,
 - 3. Functional tests for voltage sensing, automatic start and synchronization, transfer of load and load-sharing as applicable,
 - 4. Operation of engine shut-down and alarm signaling and indication, under simulated fault conditions,
 - 5. Measurement of vibration transmission to building structure.

5. LOAD BANKS

- A. If actual loads are not made available at time of acceptance testing, provide load banks to carry out complete test cycle of the system under loading and switching conditions necessary to prove compliance with the Specifications as approved by the UNDP Engineer.

6. PIPING SYSTEM

- A. Using carbon dioxide or nitrogen from pressurized cylinder, the awarded contractor should test each system to 1.5 times normal operating pressure. Do not subject equipment, apparatus or devices to pressure exceeding prescribed test pressure obtained from nameplate data or from manufacturers' published data. Apply tests before connecting piping to equipment. Remove or disconnect and blank off relief valves, instruments and devices that might be damaged by test pressure. Maintain test pressure on system for 24 hours during which time there shall be no noticeable drop in pressure. Check for leaks using soap solution. Isolate source of pressure during testing.

7. SOUND LEVEL

- A. The awarded Contractor should undertake a Sound Level test to ensure specified values.

Section 3b: Related Services

Further to the Scope of Works in the preceding Table, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfillment of the requirements:

Delivery Term [INCOTERMS 2010]	<input checked="" type="checkbox"/> DAP, Delivery at Place (Taxes Exempted)
Exact Address of Delivery/Installation Location	Baalbek Municipality, Lebanon
Delivery Date	Four (4) months from purchase order signature date.
Customs, if needed, clearing shall be done by:	UNDP will support in Custom clearance of the goods
Inspection upon delivery	Refer to Section 3a – Scope of Works
Installation Requirements	Refer to Section 3a – Scope of Works
Testing Requirements	Refer to Section 3a – Scope of Works
Scope of Training on Operation and Maintenance	Refer to Section 3a – Scope of Works
Commissioning	Refer to Section 3a – Scope of Works
Technical Support Requirements	Refer to Section 3a – Scope of Works
Payment Terms	The payment currency is USD, and the payment will be made as follows: One Hundred (100%) of the Purchase Order Value shall be paid to the Supplier upon receipt, testing and commissioning on site.
Conditions for Release of Payment	<input checked="" type="checkbox"/> Inspection upon arrival at destination <input checked="" type="checkbox"/> Installation <input checked="" type="checkbox"/> Testing <input checked="" type="checkbox"/> Training on Operation and Maintenance <input checked="" type="checkbox"/> Written Acceptance of Goods based on full compliance with ITB requirements
After-sale services required	<input checked="" type="checkbox"/> Warranty on Parts and Labor for minimum period of twelve (12) months <input checked="" type="checkbox"/> Technical Support <input checked="" type="checkbox"/> Provision of Service Unit when pulled out for maintenance/repair
All documentations, including catalogs, instructions and operating manuals, shall be in this language	<input checked="" type="checkbox"/> English <input checked="" type="checkbox"/> Arabic

Section 4: Bid Submission Form²

(This should be written in the Letterhead of the Bidder. Except for indicated fields, no changes may be made in this template.)

Insert: Location

Insert: Date

To: Luca Renda, UNDP Country Director

Dear Sir/Madam:

We, the undersigned, hereby offer to supply the goods and related services required for **the Delivery, Installation, and Commissioning of the bioenergy co-generator for the successful operation of the Baalbek biogas production plant in Baalbek, Bekaa, Lebanon** in accordance with your Invitation to Bid dated **May 19, 2015**. We are hereby submitting our Bid, which includes the Technical Bid and Price Schedule.

We hereby declare that:

- a) All the information and statements made in this Bid are true and we accept that any misrepresentation contained in it may lead to our disqualification;
- b) We are currently not on the removed or suspended vendor list of the UN or other such lists of other UN agencies, nor are we associated with, any company or individual appearing on the 1267/1989 list of the UN Security Council;
- c) We have no outstanding bankruptcy or pending litigation or any legal action that could impair our operation as a going concern; and
- d) We do not employ, nor anticipate employing, any person who is or was recently employed by the UN or UNDP.

We confirm that we have read, understood and hereby fully accept the Schedule of Requirements and Technical Specifications describing the duties and responsibilities required of us in this ITB, and the General Terms and Conditions of UNDP's Standard Contract for this ITB.

We agree to abide by this Bid for 120 days.

We undertake, if our Bid is accepted, to initiate the supply of goods and provision of related services not later than the date indicated in the Data Sheet.

We fully understand and recognize that UNDP is not bound to accept this Bid, that we shall bear all costs associated with its preparation and submission, and that UNDP will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the evaluation.

We remain,

² No deletion or modification may be made in this form. Any such deletion or modification may lead to the rejection of the Bid.

Yours sincerely,

Authorized Signature [*In full and initials*]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Contact Details: _____

[Please mark this letter with your corporate seal, if available]

Section 5: Documents Establishing the Eligibility and Qualifications of the Bidder

Bidder Information Form³

Date: *[insert date (as day, month and year) of Bid Submission]*

ITB No.: LEB/CO ITB/69/15

Page _____ of _____ pages

1. Bidder's Legal Name <i>[insert Bidder's legal name]</i>		
2. In case of Joint Venture (JV), legal name of each party: <i>[insert legal name of each party in JV]</i>		
3. Actual or intended Country/ies of Registration/Operation: <i>[insert actual or intended Country of Registration]</i>		
4. Year of Registration in its Location: <i>[insert Bidder's year of registration]</i>		
5. Countries of Operation	6. No. of staff in each Country	7. Years of Operation in each Country
8. Legal Address/es in Country/ies of Registration/Operation: <i>[insert Bidder's legal address in country of registration]</i>		
9. Value and Description of Top three (3) Biggest Contract for the past five (5) years		
10. Latest Credit Rating (Score and Source, if any)		
11. Brief description of litigation history (disputes, arbitration, claims, etc.), indicating current status and outcomes, if already resolved.		
12. Bidder's Authorized Representative Information Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>		
13. Are you in the UNPD List 1267.1989 or UN Ineligibility List? <input type="checkbox"/> YES or <input type="checkbox"/> NO		

³ The Bidder shall fill in this Form in accordance with the instructions. Apart from providing additional information, no alterations to its format shall be permitted and no substitutions shall be accepted.

14. Attached are copies of original documents of:

- ☐ All eligibility document requirements listed in the Data Sheet
- ☐ If Joint Venture/Consortium – copy of the Memorandum of Understanding/Agreement or Letter of Intent to form a JV/Consortium, or Registration of JV/Consortium, if registered
- ☐ If case of Government corporation or Government-owned/controlled entity, documents establishing legal and financial autonomy and compliance with commercial law.

Joint Venture Partner Information Form (if Registered)⁴

Date: *[insert date (as day, month and year) of Bid Submission]*

ITB No.: LEB/CO ITB/69/15

Page _____ of _____ pages

1. Bidder's Legal Name: <i>[insert Bidder's legal name]</i>		
2. JV's Party legal name: <i>[insert JV's Party legal name]</i>		
3. JV's Party Country of Registration: <i>[insert JV's Party country of registration]</i>		
4. Year of Registration: <i>[insert Party's year of registration]</i>		
5. Countries of Operation	6. No. of staff in each Country	7. Years of Operation in each Country
8. Legal Address/es in Country/ies of Registration/Operation: <i>[insert Party's legal address in country of registration]</i>		
9. Value and Description of Top three (3) Biggest Contract for the past five (5) years		
10. Latest Credit Rating (if any) :Click here to enter text.		
1. Brief description of litigation history (disputes, arbitration, claims, etc.), indicating current status and outcomes, if already resolved. Click here to enter text.		
13. JV's Party Authorized Representative Information Name: <i>[insert name of JV's Party authorized representative]</i> Address: <i>[insert address of JV's Party authorized representative]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers of JV's Party authorized representative]</i> Email Address: <i>[insert email address of JV's Party authorized representative]</i>		
14. Attached are copies of original documents of: <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> All eligibility document requirements listed in the Data Sheet <input type="checkbox"/> Articles of Incorporation or Registration of firm named in 2. <input type="checkbox"/> In case of government owned entity, documents establishing legal and financial autonomy and compliance with commercial law.		

⁴ The Bidder shall fill in this Form in accordance with the instructions. Apart from providing additional information, No alterations to its format shall be permitted and no substitutions shall be accepted.

Section 6: Technical Bid Form⁵

Delivery, Installation, and Commissioning of the bioenergy co-generator for the successful operation of the Baalbek biogas production plant in Baalbek, Bekaa, Lebanon
Reference: LEB/CO ITB/69/15

Name of Bidding Organization / Firm:	
Country of Registration:	
Name of Contact Person for this Bid:	
Address:	
Phone / Fax:	
Email:	

SECTION 1: EXPERTISE OF FIRM/ ORGANISATION

This section should fully explain the Bidder's resources in terms of personnel and facilities necessary for the performance of this requirement.

1.1 Brief Description of Bidder as an Entity: Provide a brief description of the organization / firm submitting the Bid, its legal mandates/authorized business activities, the year and country of incorporation, and approximate annual budget, etc. Include reference to reputation, or any history of litigation and arbitration in which the organisation / firm has been involved that could adversely affect or impact the delivery of goods and/or performance of related services, indicating the status/result of such litigation/arbitration.

1.2. Financial Capacity: Based on the latest Audited Financial Statement (Income Statement and Balance Sheet) describe the financial capacity (liquidity, stand-by credit lines, etc.) of the bidder to engage into the contract. Include any indication of credit rating, industry rating, etc.

1.3. Track Record and Experiences: Provide the following information regarding corporate experience within at least the last five (5) years which are related or relevant to those required for this Contract.

Name of project	Client	Contract Value	Period of activity	Types of activities undertaken	Status or Date Completed	References Contact Details (Name, Phone, Email)

⁵ Technical Bids not submitted in this format may be rejected.

SECTION 2 - SCOPE OF SUPPLY, TECHNICAL SPECIFICATIONS, AND RELATED SERVICES

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the specifications.

2.1. Scope of Supply: Please provide a detailed description of the goods to be supplied, indicating clearly how they comply with the technical specifications required by the ITB (see below table); describe how the organisation/firm will supply the goods and any related services, keeping in mind the appropriateness to local conditions and project environment.

Item No.	Description/ Specification of Goods	Source/ Manufacturer	Country of Origin	Qty	Quality Certificate/ Export Licences, etc. (indicate all that applies and if attached)

A supporting document with full details may be annexed to this section

2.2. Technical Quality Assurance Mechanisms: The bid shall also include details of the Bidder's internal technical and quality assurance review mechanisms, all the appropriate quality certificates, export licenses and other documents attesting to the superiority of the quality of the goods and technologies to be supplied.

2.3. Reporting and Monitoring: Please provide a brief description of the mechanisms proposed for this project for reporting to the UNDP and partners, including a reporting schedule.

2.4. Subcontracting: Explain whether any work would be subcontracted, to whom, how much percentage of the work, the rationale for such, and the roles of the proposed sub-contractors. Special attention should be given to providing a clear picture of the role of each entity and how everyone will function as a team.

2.5. Risks / Mitigation Measures: Please describe the potential risks for the implementation of this project that may impact achievement and timely completion of expected results as well as their quality. Describe measures that will be put in place to mitigate these risks.

2.6 Implementation Timelines: The Bidder shall submit a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.

2.7. Partnerships (Optional): Explain any partnerships with local, international or other organizations that are planned for the implementation of the project. Special attention should be given to providing a clear picture of the role of each entity and how everyone will function as a team. Letters of commitment from partners and an indication of whether some or all have successfully worked together on other previous projects is encouraged.

2.8. Anti-Corruption Strategy (Optional): Define the anti-corruption strategy that will be applied in this project to prevent the misuse of funds. Describe the financial controls that will be put in place.

2.9 Statement of Full Disclosure: This is intended to disclose any potential conflict in accordance with the definition of “conflict” under Section 4 of this document, if any.

2.10 Other: Any other comments or information regarding the bid and its implementation.

SECTION 3: PERSONNEL

3.1 Management Structure: Describe the overall management approach toward planning and implementing the contract. Include an organization chart for the management of the contract, if awarded.

3.2 Staff Time Allocation: Provide a spreadsheet will be included to show the activities of each personnel involved in the implementation of the contract. Where the expertise of the personnel is critical to the success of the contract, UNDP will not allow substitution of personnel whose qualifications had been reviewed and accepted during the bid evaluation. (If substitution of such a personnel is unavoidable, substitution or replacement will be subject to the approval of UNDP. No increase in costs will be considered as a result of any substitution).

3.3 Qualifications of Key Personnel. Provide the CVs for key personnel (Team Leader, Managerial and general staff) that will be provided to support the implementation of this project. CVs should demonstrate qualifications in area of expertise relevant to the Contract. Please use the format below:

Name:		
Role in Contract Implementation:		
Nationality:		
Contact information:		
Countries of Relevant Work Experience:		
Language Skills:		
Education and other Qualifications:		
Summary of Experience: <i>Highlight experience in the region and on similar projects.</i>		
Relevant Experience (From most recent):		
Period: From – To	Name of activity/ Project/ funding organisation, if applicable:	Job Title and Activities undertaken/Description of actual role performed:
<i>e.g. June 2010-January 2011</i>		
<i>Etc.</i>		
<i>Etc.</i>		
References (minimum of 3):	<i>Name</i> <i>Designation</i> <i>Organization</i> <i>Contact Information – Address; Phone; Email; etc.</i>	
Declaration:		
I confirm my intention to serve in the stated position and present availability to serve for the term of the proposed contract. I also understand that any wilful misstatement described above may lead to my disqualification, before or during my engagement.		
_____ Signature of the Nominated Team Leader/Member		_____ Date Signed

Section 7: Price Schedule Form⁶

The Bidder is required to prepare the Price Schedule as indicated in the Instruction to Bidders.

The Price Schedule must provide a detailed cost breakdown of all goods and related services to be provided, from unit price to lot prices. Separate figures must be provided for each functional grouping or category, if any.

Any estimates for cost-reimbursable items, such as travel of experts and out-of-pocket expenses, should be listed separately.

A. Cost Breakdown per Deliverable Items

Item	Description	Unit	Total Quantity	Unit Rate (USD)	Total Amount (USD)
01	<u>Biogas-Generator System</u>				
	<i>Supply, install, connect and test two Biogas-generators that are able to provide 100 kW (CE markings) of net electrical power each including necessary gas pipe connections, exhaust pipe connections, anti-vibration system, concrete bases and all necessary civil works, interface with gas analyzer panel, sensors, water circulation connection, synchronizing panels, auto start module, protection and control devices, power and control cables ,covered cable trays with all necessary accessories to ensure proper functioning of the system. Contractor shall execute all necessary PVC in concrete casing duct banks, sleeves, pits, Handholes, etc. all as required by Local Authorities, specified and/or as shown on drawings and to the satisfaction of the Engineer. The Contractor shall carry out all the necessary works to ensure that the generator is efficiently integrated in the existing biogas plant.</i>				
01	100	Biogas-generator to provide power (100kW) for the project.	L.S	2	

⁶ No deletion or modification may be made in this form. Any such deletion or modification may lead to the rejection of the Bid.

02		<u>Totalizing panel</u>				
		<i>Supply, install, connect and test the following totalizing panel in perfect operating conditions inclusive of enclosure, bus bars, molded case circuit breaker motorized type and all necessary components requirements of command and monitoring controls local and the like as intended to the satisfaction of the Engineer.</i>				
02	200	Totalizing panel (3x300AT/400AF), Busbar 400A.	L.S	1		
03		<u>Sound Proof System</u>				
		<i>Supply, install, connect and test the following Sound Proof Container with muffler (polyester powder coated, fire-water-dust-static proof) 70dB@1m.including all necessary accessories as required in the technical specifications and to the satisfaction of the Engineer.</i>				
03	300	Sound Proof Container (20 feet)	No.	2		
04		<u>Blower and Biogas Pre-treatment System</u>				
		<i>Supply, install, connect and test the following Blower and Biogas pre-treatment systems including desulfurization unit, air purifier separator, water condenser set ,termination to existing pipe , water network, pumps, control panel, power connection, programming, drainage network, programming, all necessary electromechanical accessories as required in the technical specifications and to the satisfaction of the Engineer..</i>				

04	400	Blower and Biogas Pre-treatment System	No.	1		
05		<u>Piping System</u>				
		<i>Supply, install, connect and test the following Piping system including Stainless Steel pipes, termination to existing pipe network and all necessary electro-mechanical accessories as required in the technical specifications and to the satisfaction of the Engineer.</i>				
05	500	Piping Network	L.S	1		
06		<u>Electrical Network</u>				
		<i>Supply, install, connect and test the following Electrical network including cables, panels, automatic transfer switch (ATS), power connection to the existing power site network and earthing system for perfect operation all as required in the technical specifications and to the satisfaction of the Engineer.</i>				
06	600	Electrical Network	L.S	1		
07		<u>Testing and Commissioning</u>				
		<i>Supply and transporting to site all equipment (load banks, etc.) and tools to perform test and commissioning of all above items to verify the perfect operation including, Accessories (O&M manual, training, etc.) for perfect operation all as required in the technical specifications and to the satisfaction of the Engineer.</i>				

07	700	Testing and Commissioning	L.S	1		
Total Price USD (DAP, Taxes Free, exclusive VAT)						
VAT (10%) if applicable						
Grand Total Price USD (DAP, Taxes Free, inclusive VAT)						

Section 8: FORM FOR BID SECURITY

(This must be finalized using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made in this template.)

To: UNDP
[Insert contact information as provided in Data Sheet]

WHEREAS *[name and address of Contractor]* (hereinafter called “the Bidder”) has submitted a Bid to UNDP dated [Click here to enter a date.](#) , to deliver goods and execute related services for *[indicate ITB title]* (hereinafter called “the Bid”):

AND WHEREAS it has been stipulated by you that the Bidder shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security in the event that the Bidder:

- a) Fails to sign the Contract after UNDP has awarded it;
- b) Withdraws its Bid after the date of the opening of the Bid;
- c) Fails to comply with UNDP’s variation of requirement, as per ITB Section F.3; or
- d) Fails to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the Bidder such this Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Bidder, up to a total of *[amount of guarantee]* *[in words and numbers]*, such sum being payable in the types and proportions of currencies in which the Price Bid is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of guarantee as aforesaid]* without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

This guarantee shall be valid until 30 days after the date of validity of the bids.

SIGNATURE AND SEAL OF THE GUARANTOR BANK

Date

Name of Bank

Address

Section 9: FORM FOR PERFORMANCE SECURITY

(This must be finalized using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made in this template.)

To: UNDP
[Insert contact information as provided in Data Sheet]

WHEREAS *[name and address of Contractor]* (hereinafter called “the Contractor”) has undertaken, in pursuance of Contract No. *Click to enter* dated *Click to enter*, to deliver the goods and execute related services *Click here to enter text*. (hereinafter called “the Contract”):

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract:

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of *[amount of guarantee]* *[in words and numbers]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of guarantee as aforesaid]* without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

This guarantee shall be valid until a date 30 days from the date of issue by UNDP of a certificate of satisfactory performance and full completion of services by the Contractor.

SIGNATURE AND SEAL OF THE GUARANTOR BANK

Date

Name of Bank

Address

Section 10: General Terms and Conditions

1. ACCEPTANCE OF THE PURCHASE ORDER

This Purchase Order may only be accepted by the Supplier's signing and returning an acknowledgement copy of it or by timely delivery of the goods in accordance with the terms of this Purchase Order, as herein specified. Acceptance of this Purchase Order shall effect a contract between the Parties under which the rights and obligations of the Parties shall be governed solely by the terms and conditions of this Purchase Order, including these General Conditions. No additional or inconsistent provisions proposed by the Supplier shall bind UNDP unless agreed to in writing by a duly authorized official of UNDP.

2. PAYMENT

- 2.1.1 UNDP shall, on fulfillment of the Delivery Terms, unless otherwise provided in this Purchase Order, make payment within 30 days of receipt of the Supplier's invoice for the goods and copies of the shipping documents specified in this Purchase Order.
- 2.1.2 Payment against the invoice referred to above will reflect any discount shown under the payment terms of this Purchase Order, provided payment is made within the period required by such payment terms.
- 2.1.3 Unless authorized by UNDP, the Supplier shall submit one invoice in respect of this Purchase Order, and such invoice must indicate the Purchase Order's identification number.
- 2.1.4 The prices shown in this Purchase Order may not be increased except by express written agreement of UNDP.

3. TAX EXEMPTION

- 3.1 Section 7 of the Convention on the Privileges and Immunities of the United Nations provides, inter alia, that the United Nations, including its subsidiary organs, is exempt from all direct taxes, except charges for utilities services, and is exempt from customs duties and charges of a similar nature in respect of articles imported or exported for its official use. In the event any governmental authority refuses to recognize UNDP's exemption from such taxes, duties or charges, the Supplier shall immediately consult with UNDP to determine a mutually acceptable procedure.
- 3.2 Accordingly, the Supplier authorizes UNDP to deduct from the Supplier's invoice any amount representing such taxes, duties or charges, unless the Supplier has consulted with UNDP before the payment thereof and UNDP has, in each instance, specifically authorized the Supplier to pay such taxes, duties or charges under protest. In that event, the Supplier shall provide UNDP with written evidence that payment of such taxes, duties or charges has been made and appropriately authorized.

4. RISK OF LOSS

Risk of loss, damage to or destruction of the goods shall be governed in accordance with DDU Incoterms 2000, unless otherwise agreed upon by the Parties on the front side of this Purchase Order.

5. EXPORT LICENCES

Notwithstanding any INCOTERM 2000 used in this Purchase Order, the Supplier shall obtain any export licences required for the goods.

6. FITNESS OF GOODS/PACKAGING

The Supplier warrants that the goods, including packaging, conform to the specifications for the goods ordered under this Purchase Order and are fit for the purposes for which such goods are ordinarily used and for purposes expressly made known to the Supplier by UNDP, and are free from defects in workmanship and materials. The Supplier also warrants that the goods are contained or packaged adequately to protect the goods.

7. INSPECTION

1. UNDP shall have a reasonable time after delivery of the goods to inspect them and to reject and refuse acceptance of goods not conforming to this Purchase Order; payment for goods pursuant to this Purchase Order shall not be deemed an acceptance of the goods.
2. Inspection prior to shipment does not relieve the Supplier from any of its contractual obligations.

8. INTELLECTUAL PROPERTY INFRINGEMENT

The Supplier warrants that the use or supply by UNDP of the goods sold under this Purchase Order does not infringe any patent, design, trade-name or trade-mark. In addition, the Supplier shall, pursuant to this warranty, indemnify, defend and hold UNDP and the United Nations harmless from any actions or claims brought against UNDP or the United Nations pertaining to the alleged infringement of a patent, design, trade-name or trade-mark arising in connection with the goods sold under this Purchase Order.

9. RIGHTS OF UNDP

In case of failure by the Supplier to fulfil its obligations under the terms and conditions of this Purchase Order, including but not limited to failure to obtain necessary export licences, or to make delivery of all or part of the goods by the agreed delivery date or dates, UNDP may, after giving the Supplier reasonable notice to perform and without prejudice to any other rights or remedies, exercise one or more of the following rights:

- a) Procure all or part of the goods from other sources, in which event UNDP may hold the Supplier responsible for any excess cost occasioned thereby.
- b) Refuse to accept delivery of all or part of the goods.

- c) Cancel this Purchase Order without any liability for termination charges or any other liability of any kind of UNDP.

10. LATE DELIVERY

Without limiting any other rights or obligations of the parties hereunder, if the Supplier will be unable to deliver the goods by the delivery date(s) stipulated in this Purchase Order, the Supplier shall (i) immediately consult with UNDP to determine the most expeditious means for delivering the goods and (ii) use an expedited means of delivery, at the Supplier's cost (unless the delay is due to Force Majeure), if reasonably so requested by UNDP.

11. ASSIGNMENT AND INSOLVENCY

- 11.1. The Supplier shall not, except after obtaining the written consent of UNDP, assign, transfer, pledge or make other disposition of this Purchase Order, or any part thereof, or any of the Supplier's rights or obligations under this Purchase Order.
- 11.2. Should the Supplier become insolvent or should control of the Supplier change by virtue of insolvency, UNDP may, without prejudice to any other rights or remedies, immediately terminate this Purchase Order by giving the Supplier written notice of termination.

12. USE OF UNDP OR UNITED NATIONS NAME OR EMBLEM

The Supplier shall not use the name, emblem or official seal of UNDP or the United Nations for any purpose.

13. PROHIBITION ON ADVERTISING

The Supplier shall not advertise or otherwise make public that it is furnishing goods or services to UNDP without specific permission of UNDP in each instance.

14. CHILD LABOUR

The Supplier represents and warrants that neither it nor any of its affiliates is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, inter alia, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development.

Any breach of this representation and warranty shall entitle UNDP to terminate this Purchase Order immediately upon notice to the Supplier, without any liability for termination charges or any other liability of any kind of UNDP.

15. MINES

The Supplier represents and warrants that neither it nor any of its affiliates is actively and directly engaged in patent activities, development, assembly, production, trade or manufacture of mines or in such activities in respect of components primarily utilized in the manufacture of Mines. The term

"Mines" means those devices defined in Article 2, Paragraphs 1, 4 and 5 of Protocol II annexed to the Convention on Prohibitions and Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects of 1980.

Any breach of this representation and warranty shall entitle UNDP to terminate this Purchase Order immediately upon notice to the Supplier, without any liability for termination charges or any other liability of any kind of UNDP.

16. SETTLEMENT OF DISPUTES

16.1 Amicable Settlement

The Parties shall use their best efforts to settle amicably any dispute, controversy or claim arising out of, or relating to this Purchase Order or the breach, termination or invalidity thereof. Where the Parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the UNCITRAL Conciliation Rules then obtaining, or according to such other procedure as may be agreed between the Parties.

16.2 Arbitration

Unless, any such dispute, controversy or claim between the Parties arising out of or relating to this Purchase Order or the breach, termination or invalidity thereof is settled amicably under the preceding paragraph of this Section within sixty (60) days after receipt by one Party of the other Party's request for such amicable settlement, such dispute, controversy or claim shall be referred by either Party to arbitration in accordance with the UNCITRAL Arbitration Rules then obtaining, including its provisions on applicable law. The arbitral tribunal shall have no authority to award punitive damages. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy, claim or dispute.

17. PRIVILEGES AND IMMUNITIES

Nothing in or related to these General Terms and Conditions or this Purchase Order shall be deemed a waiver of any of the privileges and immunities of the United Nations, including its subsidiary organs.

18. SEXUAL EXPLOITATION:

- 18.1 The Contractor shall take all appropriate measures to prevent sexual exploitation or abuse of anyone by it or by any of its employees or any other persons who may be engaged by the Contractor to perform any services under the Contract. For these purposes, sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, shall constitute the sexual exploitation and abuse of such person. In addition, the Contractor shall refrain from, and shall take all appropriate measures to prohibit its employees or other persons engaged by it from, exchanging any money, goods, services, offers of employment or other things of value, for sexual favors or activities, or from engaging in any sexual activities that are exploitive or degrading to any person. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the Contract and that any breach of this representation and warranty shall entitle UNDP to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

18.2 UNDP shall not apply the foregoing standard relating to age in any case in which the Contractor's personnel or any other person who may be engaged by the Contractor to perform any services under the Contract is married to the person less than the age of eighteen years with whom sexual activity has occurred and in which such marriage is recognized as valid under the laws of the country of citizenship of such Contractor's personnel or such other person who may be engaged by the Contractor to perform any services under the Contract.

19.0 OFFICIALS NOT TO BENEFIT:

The Contractor warrants that no official of UNDP or the United Nations has received or will be offered by the Contractor any direct or indirect benefit arising from this Contract or the award thereof. The Contractor agrees that breach of this provision is a breach of an essential term of this Contract.

20. AUTHORITY TO MODIFY:

Pursuant to the Financial Regulations and Rules of UNDP, only the UNDP Authorized Official possess the authority to agree on behalf of UNDP to any modification of or change in this Agreement, to a waiver of any of its provisions or to any additional contractual relationship of any kind with the Contractor. Accordingly, no modification or change in this Contract shall be valid and enforceable against UNDP unless provided by an amendment to this Agreement signed by the Contractor and jointly by the UNDP Authorized Official.