



<b>Project Title:</b>	Diverting Waste by Encouraging Reuse and Recycling Activity (DAWERR) USAID-funded project
<b>Request for Proposals (RFP) Title and Number:</b>	Provision and Installation of Generators and Photovoltaic (PV) systems for Ras el Matn composting station. RFP No. DAWERR-2024-02
<b>Date of Issue</b>	February 13, 2024
<b>Deadline for submitting questions:</b>	February 20, 2024
<b>Closing Date for submitting proposals:</b>	February 28, 2024

Dear Bidders:

ECODIT Beirut LLC (*henceforth ECODIT*), implementing USAID-funded DAWERR project, invites qualified offerors to submit Proposals for the Provision and Installation of Generator and Photovoltaic (PV) system for Ras el Matn composting station in accordance with the specifications listed under this RFP. Offerors are strongly encouraged to submit any comments or questions concerning this RFP by the deadline for submission of questions as stated above. All questions related to this RFP must be submitted to Carla Hammoud at [chammoud@dawerr.org](mailto:chammoud@dawerr.org), Jad Sakr at [jsakr@dawerr.org](mailto:jsakr@dawerr.org) and Capricia Chabarekh at [cchabarekh@ecodit.com](mailto:cchabarekh@ecodit.com). Unless otherwise notified by an amendment to this RFP, no questions will be accepted after this date. If substantive questions are received which affect the solicitation, or if changes are made prior to the closing date and time, this solicitation will be amended. Any amendments to this solicitation shall be issued to all prospective Offerors. All questions shall be answered to all interested offerors via e-mail.

The Proposal (technical and cost) must be in English and comprised of soft copy indicating the RFP number, title, and closing date. The Proposal must be delivered by email at [chammoud@dawerr.org](mailto:chammoud@dawerr.org), [jsakr@dawerr.org](mailto:jsakr@dawerr.org) and [cchabarekh@ecodit.com](mailto:cchabarekh@ecodit.com) no later than **Wednesday February 28, 2024, 5:00pm** (Beirut time).

Best regards,  
Carla Hammoud  
*Compliance and Grants Assistant*  
*USAID-funded DAWERR project*  
*ECODIT Beirut LLC*



- I. **Purpose** – The purpose of this solicitation is to receive proposals for the Provision and Installation of Generators and PV systems for Ras el Matn composting station.
- II. **Offeror’s Agreement with Terms and Conditions** – The completion of all RFP requirements in accordance with the instructions in this RFP and submission to ECODIT/DAWERR of a Proposal will constitute a proposal and indicate the Offeror’s agreement to the terms and conditions in this RFP and any attachments hereto. ECODIT reserves the right to award a subcontract without discussion and/or negotiation; however, ECODIT also reserves the right to conduct discussions and/or negotiations, which among other things may require an Offeror to revise its proposal (technical and/or price). Issuance of this RFP in no way obligates ECODIT to award a subcontract, nor does it commit ECODIT to pay any costs incurred by the Offeror in preparing and submitting a proposal.
- III. **Index of RFP** – This RFP is comprised of the following sections and appendices:

**Sections of RFP**

- Section 1 Proposal Instructions/Additional Information
- Section 2 Description of Work and Services Requested
- Section 3 Evaluation Criteria
- Section 4 Special Provisions

**Appendices**

- Appendix A: Proposal Cover Letter
- Appendix B: Bill of Quantity
- Appendix C: Method Statement – Outline
- Appendices D, E, F, G: Drawings and Specifications for Generator and PV System for Ras el Matn composting station.
- Appendix H: QA/QC Procedures
- Appendix I: Environmental Mitigation and Monitoring Plan (EMMP) for the provision and installation of generator and PV system

**IV. Composition of Proposal**

Offeror shall submit Proposal for items detailed in Appendix B, Bill of Quantity. The proposal will consist of Appendices A, B, and C. Offeror must provide adequate and qualified staff for all work including Site Manager, in addition to two site engineers including electrical and civil engineers. Offeror shall elaborate on Staff Members in its Detailed Method Statement, that will be submitted as part of the Technical Proposal. During implementation, any staff acting irresponsible in an unsafe manner shall be immediately terminated under the awarded subcontract.



Proposals may be accepted by ECODIT and executed as a subcontract without any discussions, or ECODIT may decide to open discussions as necessary to clarify any issues in the proposals. ECODIT also has the option to amend the solicitation as necessary prior to any Subcontract Award. ECODIT will notify and provide all offerors with any amendment pertaining to this RFP.

Proposed prices must be in USD, exempted of VAT. ECODIT Beirut LLC is exempt from paying VAT under license number EFF/2021/64 issued by the Ministry of Finance on 06/29/2020. ECODIT reserves the right to request a breakdown of the price and additional justification for items that are underbudgeted or overbudgeted by the offerors. ECODIT reserves the right to request an additional justification for items that are underbudgeted or overbudgeted by the offerors.

ECODIT encourages bidders to provide their offers for provision and installation of both generator and PV system.

Offerors shall submit their proposals signed and stamped in soft copies.

## **SECTION 1 – PROPOSAL INSTRUCTIONS / ADDITIONAL INFORMATION**

1. Offerors must submit **two packages** divided as below and delivered by email to DAWERR staff mentioned on the cover page.

**i. Administrative & Technical Documents Package:**

- All pages of the RFP signed and sealed including all appendices.
- Detailed Method Statement for Provision and Installation of Generator and PV system for Ras el Matn composting station (following the outline included in Appendix C) including a Work Plan (to be developed based on the BOQ included in Appendix B).
- Technical documents including certificates, calculations, warranties as applicable.

**ii. Financial Offer Package:**

- Offeror shall submit proposed pricing in prescribed format found in Appendix B for the generator and PV system, based on final design drawings included in Appendices D, E, F, G, H, I, J and K: Drawings and Specifications for Generator and PV System for Ras el Matn composting station. The offeror shall write his/her prices (in US dollars) in numbers and letters (for the total price) with signature,



stamp, and date on each page of the list of works specifications, required quantities, and individual and total prices.

- The total value of the works must be clearly indicated for each item separately, as well as the overall total, all in US dollars (fresh USD).
  - Cover Letter on the Offeror's letterhead, signed by a person authorized to sign on behalf of the Offeror. Use the template in Appendix A.
2. **Type of Subcontract:** ECODIT intends to issue a Fixed Unit Price Not-To-Exceed (NTE) Fixed Price Ceiling subcontract for the provision and installation of generator and PV system for Ras el Matn composting station. The fixed unit prices or the NTE fixed price ceiling will not be subject to any increase on the basis of the subcontractor's cost experience in performing the work.
3. **Performance:**
- a) Upon award of the subcontract, the Subcontractor shall immediately commence the work.
  - b) After the subcontract is issued, neither ECODIT nor the Subcontractor may alter it without a formal bilateral modification.
  - c) Under no circumstance shall any adjustments authorize the subcontractor to be paid in excess of the fixed unit prices or fixed price ceiling.
  - d) The subcontractor may delegate or assign (subcontract) partial performance of a subcontract to another organization. This shall be included as part of the Proposal or subject to the written consent of the ECODIT Construction and Contract Managers after award.
4. **Payment terms:** Deliverables and payment schedule will be included in the subcontract. Upon award, the subcontractor shall submit a Mobilization Plan for generator and PV system for Ras el Matn corresponding to the first payment/mobilization payment of 5% of the total amount of subcontract (considered as upfront payment). During implementation and following every payment request submitted by the subcontractor, ECODIT will review and issue a payment verification report including QA/QC approved documentation (refer to Appendix L for QA/QC Procedures). ECODIT will pay to the subcontractor the amount invoiced and approved after deducting 10% of every invoice as retention. ECODIT will release 5% of the retention after USAID issuance of completion verification and remaining 5% after six months (defect liability period) of completion verification.
5. **Proposal Pricing validity:** Net 150 days from date of proposal submission
6. Offerors must fulfill the following **eligibility criteria:**



- Be registered in the Commercial Registry with a valid registration, and provide a copy of registration showing validity during the proposal validity period or beyond;
- Be registered with the Directorate of Value Added Tax (VAT) and provide a copy of the certificate of registration;
- Tax Identification number details (Tax registration Certificate)
- Operate a non-bankrupt business and provide (1) a non-bankruptcy statement issued by the competent bankruptcy court, and (2) a statement of the Bidder that he/she is not under judicial liquidation, issued by the Commercial Court; both statements should be dated no more than six months before the deadline for submitting the Proposal;
- Have a Professional Liability Insurance Policy with coverage for at least \$500,000 for any one claim and \$1,000,000 in the aggregate and provide a copy of it, or provide a signed Commitment letter to obtain such insurance prior to contract execution;
- Provide a signed Commitment letter to obtain a Contractor's All Risk (CAR) insurance policy, Contractor General Liability Insurance policy, Workers' Compensation Insurance (all-in-one or separate policies) prior to contract execution;
- Have implemented at least three similar projects worth at least \$50,000 successfully in the past three years and provide relevant supporting documentation (experience on USAID funded projects is a plus);
- Contact person, telephone, and e-mail; and
- Have a Unique Entity Identifier (UEI) number (request a Unique Entity ID only without having to complete a full registration) which can be obtained here: <https://sam.gov/content/entity-registration>.

The following types of organizations are not eligible under this RFP:

- Public International Organizations.
- Organizations with active exclusions in the System for Award Management (SAM) – refer to [www.sam.gov](http://www.sam.gov);
- Any municipal/city, provincial and national government.
- Organizations that advocate, promote, or espouse anti-democratic policies or illegal activities.
- Political parties or institutions.
- Organizations that are on the list of parties excluded from federal procurement and non-procurement programs or the United Nations Security Sanctions Committee.



- Any entity whose name or individual executives appears on any exclusions lists maintained by the U.S. Treasury's Office of Foreign Assets Control (OFAC) or UN's master list of prohibited individuals or entities.



In addition, the following sources for PV systems are not eligible under this RFP:

- The following inverters brands are not accepted:
  1. Huawei Technologies Company.
  2. ZTE Corporation.
  3. Hytera Communications Corporation.
  4. Hangzhou Hikvision Digital Technology Company.
  5. Dahua Technology Company.
  6. Or any subsidiary or affiliate of such entities.
  
- The following panels brands are not accepted:
  1. Hoshine Silicon Industry (metallurgical grade silicon and silicon products)
  2. Xinjiang Daqo New Energy (polysilicon, wafers)
  3. Xinjiang East Hope Nonferrous Metals (polysilicon, ingots, wafers)
  4. Xinjiang GCL-New Energy Material (polysilicon, ingots, wafers, cells, modules)
  5. Xinjiang Production and Construction Corps (state-owned paramilitary organization, electricity supplier)

As part of their Technical Proposals, Bidders shall submit proof of eligibility as well as documentation showing the material sources and producers/manufacturers.

#### **7. Conflict of Interest**

In accordance with FAR 9.505 the Offerors shall take all reasonable and legal means to (a) prevent the existence of conflicting roles that might bias subcontractor's judgment, and (b) prevent unfair competitive advantage. See [FAR 9.505](#) for additional details.

## **SECTION 2 – DESCRIPTION OF WORK AND SERVICES REQUESTED**

This RFP concerns the provision and installation of generator and PV system for the composting station in Ras el Matn.

DAWERR is supporting Ras el Matn municipality and their local community to develop sustainable composting value chain for organic waste, including source separation, collection, and composting of organic waste through the construction of small-scale, low-tech, low-cost composting stations, creating local demand for the compost produced for agricultural, landscaping, or other uses as soil conditioner/fertilizer supplement. DAWERR will construct one central



composting station in Ras el Matn and provide necessary equipment including generators and PV systems for the operation of the stations.

Over a three-month period, and based on drawings, BOQ and specifications included in Appendices B, C, D, E, F, G, H, I the Contractor shall conduct the following:

- Supply and install the generator and the PV system;
- Install the electrical panel boards, cabling, and networks;
- Execute the steel structure holding the PV panels and its related reinforced concrete works;
- Test and commission the generator and PV system, and provide necessary warranties to the relevant municipality; and
- Train workers on the operation of the generator and PV system.

The Contractor will be expected to take possession of the site and begin installation upon receiving order to proceed from ECODIT. The contractor is expected to coordinate with the construction contractor under the direction of DAWERR Construction Manager or his designee.

Tentative timeline for provision and installation of generator and PV system : June 2024 - July 2024 – August 2024.

Coordinates of Ras el Matn composting station:

X -321607.9423

Y -35375.1636

### SECTION 3 – EVALUATION CRITERIA

All proposals received in response to this solicitation will be evaluated by DAWERR based on evaluation factors listed below. The subcontract shall be awarded based on the best value to DAWERR. The lowest price is not the determining factor for this award.

<b>RATINGS</b>	
<b>Criteria</b>	<b>Weight</b>
Price	50
Method Statement including workplan	20
Meets all required technical specifications	20
Warranty details	10
<b>Total</b>	<b>100</b>





## SECTION 4 – SPECIAL PROVISIONS

### 4.1 Source and Nationality

This RFP and resultant subcontract will be funded by USAID and will be subject to U.S. Government and USAID regulations. The authorized USAID geographic code for this RFP is Code **937**. Code 937 is defined as the United States, the cooperating/recipient country, and developing countries other than advanced developing countries, and excluding prohibited sources. A list of developing countries, advanced developing countries, and prohibited sources is available in USAID's Automated Directives System, ADS 310 <http://www.usaid.gov/policy/ads/300/310.pdf>.

The following applies to this RFP and any resulting subcontract:

#### Definition

- i. **Cooperating Country:** “Cooperating country” means Lebanon.
- ii. **Source:** “Source” means the country from which a commodity is shipped to the cooperating country or the cooperating country itself if the commodity is located therein at the time of purchase. However, where a commodity is shipped from a free port or bonded warehouse in the form in which received therein, “source” means the country from which the commodity was shipped to the free port or bonded warehouse
- iii. **Nationality:** “Nationality” refers to the place of incorporation, ownership, citizenship, residence, etc. of suppliers of this good and must fall under the 937 code.

### 4.2 Inspection

ECODIT shall have reasonable time to inspect the work of the subcontractor anytime during the performance period of the subcontract based on the QA/QC Procedures (in Appendix F) as well as after handing over, and to reject acceptance if not conforming to the specifications of the subcontract and offer. Recovery of the rejected item (s) shall be the sole responsibility of the subcontractor.

### 4.3 Insurances

Offerors must have a Professional Liability Insurance Policy with coverage for at least \$250,000 for any one claim and \$500,000 in the aggregate and provide a copy of it or provide a signed Commitment letter to obtain such insurance prior to subcontract execution.

Offerors must have or provide a signed Commitment letter to obtain a Subcontractor's All Risk (CAR) insurance policy, Subcontractor General Liability Insurance policy, Workers' Compensation Insurance (all-in-one or separate policies) prior to subcontract execution. If



Offerors cannot provide such Worker's Compensation Insurance, Offerors must purchase a Defense Base Act (DBA) Insurance upon execution of the subcontract (details will be provided in the subcontract).

#### **4.4 Warranty**

Warranty service and repair is required for the work under this RFP. The warranty coverage must be valid for 1 year after the delivery, installation and acceptance of completed work/provisional handing over, unless ECODIT otherwise specified in the technical specifications. As part of the Method Statement, Offerors shall describe their warranty and demonstrate how they will provide the services covered under the warranty period.

ECODIT expects that the warranty coverage must be valid on the requested PV On-Grid System as follows:

- PV modules: 10-year warranty on material and manufacturing
- Solar inverter/fuel controller: 5 years warranty on material and manufacturing
- Electrical works: 1 year
- Structure: shall be covered by a liability period of five years' guarantee

The warranty coverage must be valid on the requested Generators as follows:

- Generator /Controller: 1 year warranty on material and manufacturing
- Fuel system: 1 year
- Electrical work: 1 year

The warranty shall cover all works, manpower, spare parts, replacements, resulting from failure of equipment, systems and accessories supplied by the selected bidders, except when said failures are due to the Client's fault.

Also, the Subcontractor shall be responsible for sharing with ECODIT copies of all warranties provided by third party vendors. The cost of any construction, item or materials will be replaced at no cost to ECODIT. The only exception to this warranty is if an occurrence of destruction or defect occurs due to an act caused by either climate or an act beyond the control of any person. All replacements or repairs shall be provided within 10 days after notification by ECODIT.

If the Subcontractor chooses not to repair or replace any defect or damage, then the Subcontractor shall reimburse ECODIT for all cost incurred to perform the repair or replacement. If the Subcontractor will not reimburse any defect or damage, then ECODIT shall use the 5% retention to repair or replace any defect or damage. If the cost of defect/damage



exceeds the 5% and the subcontractor is not reimbursing the difference and/or is not cooperating with ECODIT, then any failure of the Subcontractor shall be reported to the Government of Lebanon's Department of Justice for review, consideration, and enforcement. All fines and/or costs resulting from this referral will be the whole responsibility of the Subcontractor.

#### **4.5 Training**

Selected bidder(s) must conduct a demonstration and training on how to use the generator and solar PV system for workers responsible for operating the supplied equipment at the composting station in Ras el Matn and to provide guidance booklets and instruction manuals for the supplied equipment.



## APPENDIX A - PROPOSAL COVER LETTER

[On Letterhead]

TO: DAWERR  
Procurement Department

Ladies and Gentlemen:

We, the undersigned, offer to provide the **RFP - \*project title and RFP #\* Provision and Installation of Generator and PV system for Ras el Matn composting stations\*** in accordance with your Request for Proposal dated and our enclosed Proposal.

Our proposal of \$        shall be binding upon us subject to any revisions resulting from contract negotiations, up to expiration of the validity period of 150 days of the proposal, i.e., <>.

We understand you are not bound to accept any quotation you receive.

Yours Sincerely,

Authorized Signature:  
Name and Title of  
Signatory:  
Name of Firm:  
Address, email and Phone No.



## APPENDIX B - BILL OF QUANTITY

<b>GENERATOR WORKS</b>					
Item	Description	Unit	Quantity	Unit Cost without VAT	Total Cost without VAT (US\$)
<b>A</b>	<b>GENERATOR</b>				
<b>A1</b>	supply, install, and program including crane price and testing and commission as per RFP the following items as per specifications and as shown on drawings. -Price will include testing and shop drawing.				
A1.1	30 Kva Prime Generator With Canopy 68 dB @1m, sylomer Muffler ,Water Fuel Seperator, Heater, Strainer,Control Panel( Deep sea as per RFP or equivalent ), neutral grounding, equipotential bonding,emergency stop, CRANE, BOBCAT.....	1	No.		
A1.2	2000 L Fuel Tank, digital fuel level indicator, buzzer,ladder .... as per dwgs	1	item		
A1.3	Catalytic Filter	1	item		
A1.4	Fuel Pipes and Valves, filling line	1	item		
A1.5	Control Cables between Ats and generator, between fuel tank and generator, between fuel levels and ATS	1	item		
A1.6	Heater Power cable 3x2,5mm2 (0.6 / 1 KV Conforming to IEC 60502-1 /)	20	lm		
A1.7	Charger Power cable 3x2,5mm2 (0.6 / 1 KV Conforming to IEC 60502-1 /)	20	lm		



A1.8	Oil and Fuel SPILL KIT: kit sizes 240L bin , 60L drums spill kit and 50L and 25L carry bag spill kits. The contents in these diesel spill kits include floor sweep, absorbent booms, absorbent pillows, absorbent pads, wipes, gloves and waste disposal bags.	1	item		
A1.9	IP55 emergency stop in red metal box, including all control cables	1	item		
A1.10	25 Kg wheeled ABC fire extinguisher.	1	item		
<b>A2</b>	<b>Power cables:</b> Supply, install, connect, test and commission the following items as per specifications and as shown on drawings.				
A2.1	4C x16mm <sup>2</sup> Cable Cu./PVC/PVC 0.6/1.0 Kv	35	lm		
A2.2	1 x16mm <sup>2</sup> PVC/Cu Y/G AS ECC, earth cables (to IEC 227)	35	lm		
A2.3	neutral grounding connection	1	item		
<b>A3</b>	<b>Conduits:</b> Excavate, supply, install, and commission the following items as per specifications and as shown on drawings.				
A3.1	Conduiting for control and power up to the nearest manhole, and between the fuel tank and the generator, for the present anf future GE	1	item		
<b>TOTAL A</b>					
<b>B OTHERS</b>					



B1	contractor to quote any item in the dwg not listed in the BOQ (details to be sent)	1	item		
<b>TOTAL B</b>					
<b>GENERATOR works total amount excluding VAT</b>					



## PV SYSTEM WORKS

Item	Description	Unit	Quantity	Unit Cost without VAT	Total Cost without VAT (US\$)
<b>A GENERATOR</b>					
<b>A1</b>	supply, install, including crane price and commission the following items as per specifications and as shown on drawings.				
<b>A1.1</b>	<b>PV SYSTEM</b> Supply, Install, Connect, Test And Commission The Following . ( Crane Cost Included if needed)				
<b>A1.2</b>	PV Panels as per dwgs and RFQ (15KWP) including secondary structure	Ls	1.0	<b>incl</b>	
<b>A1.3</b>	PV On-Grid inverter as per dwgs and RFQ (15KW)	nbr	1.0	<b>incl</b>	
<b>A1.4</b>	PV controller / Fuel saver, current transformer as per dwgs and RFQ	LS	1.0	<b>incl</b>	
<b>A1.5</b>	AC cabling including conduits ,AC Box IP55 rated box, AC surge arrestors as per dwgs and RFQ	LS	1.0	<b>incl</b>	
<b>A1.6</b>	PV DC cabling including DC, conduits , Box IP65 rated box, DC disconnects, DC fuses and DC surge arrestors as per dwgs and RFQ	LS	1.0	<b>incl</b>	
<b>A1.7</b>	cat6 cable	LS	1.0	<b>incl</b>	
<b>A1.8</b>	irradiation, temperature and wind sensor, including software , cabling and conduiting	LS	1.0	<b>incl</b>	
<b>A1.9</b>	PV supports and accessories	LS	1.0	<b>incl</b>	
<b>A1.10</b>	equipotential Bonding as per Dwgs and RFP	LS	1.0	<b>incl</b>	
<b>TOTAL A</b>					
<b>B OTHERS</b>					





B1	contractor to quote any item in the dwg not listed in the BOQ ( details to be sent)	1	item		
<b>TOTAL B</b>					
<b>PV system works total amount excluding VAT</b>					

Total estimated cost for the Provision and Installation of Generator & PV System in Ras el Matn is in the range of **\$40,000 to \$70,000**.



## APPENDIX C - METHOD STATEMENT - OUTLINE

### Method statement for PV system installation

#### Table of contents

1. Scope
2. Definitions
3. Health and safety
4. Operation
5. Installation and fixation
6. Responsibilities
7. Manpower required
8. Materials requirements
9. Equipment requirements
10. Training and closing Documents
11. Waste management
12. Special control measures.
13. Supporting documentation
14. Distribution



## 1. Scope

- This procedure to clear the method of the supply, installations of PV system for the project.
- This document details PV system installation:
- Preparation of work.
- Delivery and inspection upon arrival of material at site.
- Installation of the system.

## 2. Definitions

PQP	: project quality plan
PSP	: project safety plan
QCP	: quality control procedure
HSE	: health, safety and environment
MS	: method statement
ITP	: inspection test plan
QA/QC	: quality assurance / quality control engineer.
WIR	: inspection and test request
MIR	: material verification record.
MS	:Method Statement
IFC	:Issued For Construction
PV	: Photovoltaic
VOC	:Open-circuit voltage
GE	:Generator

## 3. Health and safety

- Strictly followed as per the manufacturer's health and safety recommendations for handling and use of the materials.
- Ensure all involved personnel shall be aware of the same.
- Specific safety measures have to follow as applicable, and all the safety measures are covered separately in the project safety plan.

## 4. Operation



- **coordination:**
  - coordinate with other trades for : structure, earthing, ATS control, GE system, Fuel saving controller. prefab supports ( If any), hangar structure ( where needed),trenches connection
  - The sizes and routes routing will be as per the approved shop drawings.
  
- **Material:**
  - Material used will be as approved by the consultant.
  - The sizes and routes routing will be as per the approved shop drawings.
  
- **Storage and protection:**
  - Deliver components parts to site, completely identified in accordance with shop and certified cad drawings prepared for this work.
  - Store in accordance with the manufacturer’s instructions, above ground, properly protected from the weather and construction activities.

## **5. Installation and fixation**

- Off-loading:
  - Use mobile crane to off-load Panels, and metallic structure. All safety precaution shall be adhered during off loading.
  - Ensure the safety of equipment and workers.
  - sets shall be cover until final reception
  
- Pre-installation:



- All materials and documentation relevant to this particular section of works shall be checked prior to the installation.
  - Make sure that the PV panels space is clear and free of debris and foreign materials.
  - Make sure that supporting flanks, pipe rollers, chain blocks, hydraulic jacks and other tools required for installation are in place.
- Installation:
  
  - Commissioning:
    - Test the system in accordance to specification and manufacturer recommendation.
    - All testing will be carried out in the presence of consultant.
    - Test shall be carried out by the specialist testing engineers.
    - All test sheet shall be certified by the installer representative.
  
  - Technical assistance:
    - The installation supervising technician for the system trade shall instruct the consultant engineer, and construction site manager on the programming and correct operation of the system after the installation is completed.
    - This instruction shall be scheduled at the convenience of the staff.
    - All such instruction shall be properly recorded.
    - will be issued for consultant approval upon making sure that the installation of the system equipment's done as per approved shopdrawings and specs and manufacturer recommendations.

## **6. Responsibilities**

### **Project manager**

- To ensure that all the preparation and application works are carried out according to the contract specification and with the approved drawings.
- To ensure that the progressing of works is carried out according to the planned program and as per the approved method of statement.
- To ensure that all the equipment and material required executing the work are available according to the planned construction program.



- To co-ordinate with the main contractor, mep coordinator, safety officer for a safe and proper execution of the works.

### **Site engineer**

- To ensure that the works are carried out according to the contract specification, approved method statement and the shop drawings.
- To provide all necessary information and distribute responsibilities to his construction.
- To monitor the progress of work in relation with the work program and to report to the project manager.
- To co-ordinate with the safety officer and to ensure that the works are carried out in safe practicing method.

### **Foreman**

- The foreman will carry out his duties by maintaining continuous coordination with the site engineer on daily basis, and ensure proper distribution of the work force on the required and planned locations.
- To ensure that his assistant foreman/ charge hand are aware of the job requirements and they have enough information to carry out their duties properly.
- To ensure that the daily work is progressing as planned and advice the site engineer of any requirement for additional resources.
- To ensure in consultation with the site engineer that the manpower involved in the works are moving as agreed and planned for the work.
- To control disposal of waste materials according to the instructions received from the site engineer.
- To ensure full coordination with the safety officer to maintain safe working and proper house keeping of the site, following the proved safety measures and further ensure that all his working team are aware of the same to prevent accident and losses.
- To inform the site engineer regarding areas ready for inspection.
- Foreman and the storekeeper are responsible for the distribution and control of materials.

### **Safety engineer**

- Ensure the implementation of all the safety measures in accordance with the hse plan and everybody aware of it for it's proper implementation.



- Ensure all the implemented safety measures are adequate to maintain safe working on the site.
- Inspect all the site activities and train the person to prevent accidents and it's proper implementation.
- Ensure that the site is maintained clean and tidy.

#### **Technician from supplier**

- The carrying-out of work and the proper distribution of all the available resources in coordination with the sub-contractor site engineer on a daily basis.
- Daily reports of the works are achieved and coordinated for the future planning with the site engineer.
- Complying with the sub-contractor basic design practices, particularly those related to safety and engineering
- Meeting with any type of unforeseen incident or requirement and reporting the same to the site engineer immediately.

#### **Store keeper (as needed)**

- Responsible for overall store operations in making sure to store the material delivery to the site and keep it in suitable area that will keep the material in safe from rusty and damage.
- One who will acknowledge the receiving of materials at site in coordination with qa/qc and concerned engineer.

### **7. Manpower required**

- Charge hand and experienced technicians

### **8. Materials requirements**

- Pv Panels structure and concrete ( where needed)
- Pv panels components and accessories
- PV inverter
- Protection
- Fuel saving controller
- cabling and accessories

### **9. Equipment requirements**



- The equipment that will be engaged for PV system installation will be as follows:
  - Hand tools
  - Power tools (if required)
  - Diagonal-cutting pliers
  - Wire stripper/cutter with spring
  - Side-cutting pliers
  - Shank screwdriver/flat screwdriver.
  - Compression lug crimp tool
  - Necessary conduit for system cabling
  - Knock out set (for conduit)
  - P.P.E. – personal protective equipment (safety helmet, boots, gloves & safety vest )

#### **10. Training and closing Documents.**

- after commissioning a training to the user should be held
- Complete documentation should be submitted.

#### **11. Waste management**

- The rubbish which would be created from our scope of work will be disposed to the designated dumping ground.

#### **12. Special control measures**

- The following general control measures against safety, environment and quality shall be required for our scope of work and special control measures are not applicable for us:
  - Proper PPE must be worn at all times.
  - Permit to work at height > 2m where applicable.
  - Lifting operation permit (using crane) where applicable.
  - Confined space permit where applicable.
  - Approved work method statement and risk assessment will be made available to site.
  - All workers doing the work shall be briefed on this method statement and risk assessment.

#### **13. Supporting documentation**





- This method statement should be read in conjunction with the below referenced documentations:
- Insulation resistance and continuity test report.
- PV system
- Electrical works
- GE works

#### **14. Distribution**

- Copy of this method statement shall be issued to the following for information / action / comments:

- Project manager
- Site engineer
- Foremen
- Safety engineer
- Technician from supplier
- Storekeeper.



Method statement for Diesel Generator installation

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  9. Equipment requirements
  10. Training and closing Documents.
  11. Waste management
  12. Special control measures.
  13. Supporting documentation
  14. Distribution



## 1. scope

- This procedure is to clear the method of the supply, installations of diesel generator for the project.
- This document details diesel generator installation:
- Preparation of work.
- Delivery and inspection upon arrival of material at site.
- Installation of the system.

## 2. Definitions

PQP: project quality plan

PSP: project safety plan

QCP: quality control procedure

HSE: health, safety, and environment

MS: method statement

ITP: inspection test plan

QA/QC: quality assurance / quality control engineer.

WIR: inspection and test request

MIR: material verification record.

## 3. Health and safety

- Strictly followed as per the manufacturer's health and safety recommendations for handling and use of the materials.
- Ensure all involved personnel shall be aware of the same.
- Specific safety measures have to follow as applicable, and all the safety measures are covered separately in the project safety plan.

## 4. Operation

- **coordination:**
  - coordinate with other trades for: structure, earthing, ATS control, PV system Fuel saving
  - The sizes and routes routing will be as per the approved shop drawings.



- **Material:**

- Material used will be as approved by the consultant.
- The sizes and routes routes will be as per the approved shop drawings.
- generator to be commissioned at the supplier/manufacturer place.

- **Storage and protection:**

- Deliver components parts to site, completely identified in accordance with shop and certified cad drawings prepared for this work.
- Store in accordance with the manufacturer's instructions, above ground, properly protected from the weather and construction activities.

## **5. Installation and fixation**

- **Off-loading:**

- Use mobile crane to off-load the generator sets. Capacity of crane shall be capable of carrying the weight of the generator set. All safety precautions shall be adhered to during off-loading.
- Ensure the safety of equipment and workers.
- Offload the generator sets on the designated area.
- generator set shall be covered until final reception.

- **Pre-installation:**

- All materials and documentation relevant to this particular section of work shall be checked prior to the installation.
- Make sure that the generator space is clear and free of debris and foreign materials.
- Ensure that the access for generator set installation is free from obstructions.



- Make sure that supporting flanks, pipe rollers, chain blocks, hydraulic jacks and other tools required for installation are in place.
- Installation:
  - Lift the generator using a mobile crane or portable hydraulic crocodile jack.
  - Set the generator in the proper location. Lift the generator set using portable crocodile hydraulic jack.
  - Fix the spring vibration isolator or the antivibration pads. Ensure that it is fixed and aligned properly.
  - Associated work related to the generator set such as generator exhaust system, fuel system, acoustic lining etc, will commence.
  - After completing all associated works related to the generator set, raise a request for inspection for generator installation.
  - Install all safety equipment.
- Commissioning:
  - Test the generator in accordance to specifications and manufacturer recommendation.
  - All testing will be carried out in the presence of a consultant.
  - Tests shall be carried out by the manufacturer's testing engineers.
  - All test sheets shall be certified by the manufacturer's representative.
- Technical assistance:
  - The installation supervising technician for the system trade shall instruct the consultant engineer, and construction site manager on the programming and correct operation of the system after the installation is completed.
  - This instruction shall be scheduled at the convenience of the staff.
  - All such instruction shall be properly recorded.
  - will be issued for consultant approval upon making sure that the installation of the system equipment's done as per approved shopdrawings and specs and manufacturer recommendations.

## 6. Responsibilities



### **Project manager**

- To ensure that all the preparation and application works are carried out according to the contract specification and with the approved drawings.
- To ensure that the progress of works is carried out according to the planned program and as per the approved method of statement.
- To ensure that all the equipment and material required executing the work are available according to the planned construction program.
- To co-ordinate with the main contractor, mep coordinator, safety officer for the safe and proper execution of the works.

### **Site engineer**

- To ensure that the works are carried out according to the contract specification, approved method statement and the shop drawings.
- To provide all necessary information and distribute responsibilities to his construction.
- To monitor the progress of work in relation to the work program and to report to the project manager.
- To co-ordinate with the safety officer and to ensure that the work is carried out in safe practicing method.

### **Foreman**

- The foreman will carry out his duties by maintaining continuous coordination with the site engineer on daily basis and ensure proper distribution of the work force on the required and planned locations.
- To ensure that his assistant foreman/ charge hand is aware of the job requirements and they have enough information to carry out their duties properly.
- To ensure that the daily work is progressing as planned and advise the site engineer of any requirement for additional resources.
- To ensure in consultation with the site engineer that the manpower involved in the works are moving as agreed and planned for the work.
- To control disposal of waste materials according to the instructions received from the site engineer.
- To ensure full coordination with the safety officer to maintain safe working and proper housekeeping of the site, following the proved safety measures and further ensure that all his working team are aware of the same to prevent accidents and losses.
- To inform the site engineer regarding areas ready for inspection.



- Foreman and the storekeeper are responsible for the distribution and control of materials.

### **Safety engineer**

- Ensure the implementation of all the safety measures in accordance with the hse plan and everybody aware of it for it's proper implementation.
- Ensure all the implemented safety measures are adequate to maintain safe working on the site.
- Inspect all the site activities and train the person to prevent accidents and it's proper implementation.
- Ensure that the site is maintained clean and tidy.

### **Technician from supplier**

- The carrying out of work and the proper distribution of all the available resources in coordination with the sub-contractor site engineer on a daily basis.
- Daily reports of the works are achieved and coordinated for the future planning with the site engineer.
- Complying with the sub-contractor basic design practices, particularly those related to safety and engineering.
- Meeting with any type of unforeseen incident or requirement and reporting the same to the site engineer immediately.

### **Storekeeper (as needed)**

- Responsible for overall store operations in making sure to store the material delivery to the site and keep it in suitable area that will keep the material safe from rusty and damage.
- One who will acknowledge the receiving of materials at site in coordination with qa/qc and concerned engineer.

## **7. Manpower required**

- Charge hand and experienced technicians

## **8. Materials requirements**

- Diesel generator components and accessories
- fuel tank and accessories



- cabling and accessories

## **9. Equipment requirements**

- The equipment that will be engaged for diesel generator installation will be as follows:
  - Hand tools
  - Power tools (if required)
  - Diagonal-cutting pliers
  - Wire stripper/cutter with spring
  - Side-cutting pliers
  - Shank screwdriver/flat screw driver.
  - Compression lug crimp tool
  - Necessary conduit for system cabling
  - Knock out set (for conduit)
  - P.P.E. – personal protective equipment (safety helmet, boots, gloves & safety vest )

## **10. Training and closing Documents.**

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- The following general control measures against safety, environment and quality shall be required for our scope of work and special control measures are not applicable for us:
  - Proper ppe must be worn at all time.
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  - Lifting operation permit (using crane) where applicable.
  - Confined space permit where applicable.
  - Approved work method statement and risk assessment will be made available to site.





- All workers doing the work shall be briefed on this method statement and risk assessment.

### **13. Supporting documentation**

- This method statement should be read in conjunction with the below referenced documentations:
  - Insulation resistance and continuity test report.
  - Noise Level
  - PV system
  - Electrical works

### **14. Distribution**

- Copy of this method statement shall be issued to the following for information / action / comments:

- Project manager
- Site engineer
- Foremen
- Safety engineer
- Technician from supplier
- Storekeeper.



**APPENDIX D  
RAS EL MATN PV ON-GRID SYSTEM SPECIFICATIONS**

**&**

**APPENDIX E  
RAS EL MATN PV ON-GRID DRAWINGS**

**&**

**APPENDIX F  
RAS EL MATN GENERATOR SPECIFICATION**

**&**

**APPENDIX G  
RAS EL MATN GENERATOR DRAWINGS**



## APPENDIX H - QA/QC PROCEDURES

Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
<b>Project organizational chart</b>	Contract award/ Beginning of the project	Local Development Lead	Construction manager	Chief of Party	LDL will prepare the project organizational chart and will specify the human resources needed to develop the project.  The Organizational chart will be adapted to every Project under DAWERR	Project Organizational chart
<b>Mobilization</b>						
<b>Mobilization Plan (including Schedule)</b>	Beginning of the project	Contractor	Site supervisor/ Field Coordinator	Construction manager	As per contract requirements	Document submittal <b>DS Form</b>
<b>Submittals</b>						



Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
<b>Material submittal*</b>	As per schedule	Contractor	Site supervisor/ Field Coordinator	Construction manager/ Other Engineering Specialists	As per contract requirements	Material Submittal <b>MS Form</b>
<b>Shop Drawing submittal*</b>	As per schedule	Contractor	Site supervisor/ Field Coordinator	Construction manager/ Specialist	As per contract requirements	Shop drawing submittal <b>SDS Form</b>
<b>As-Built Submittal*</b>	End of the project	Contractor	Site supervisor/ Field Coordinator	Construction manager/ Specialist	As per contract requirements	As built submittal <b>AsBS Form</b>
<b>Documents Submittal*</b>	As per schedule/ End of the project	Contractor	Site supervisor/ Field Coordinator	Construction manager/ Specialist	As per contract requirements	Documents submittal <b>DS Form</b>
<b><i>Site operations &amp; reports</i></b>						
<b>Work plan</b>	Beginning of the project	Contractor	Site supervisor/ Field Coordinator	Construction manager	As per contract requirement	Documents submittal <b>DS Form</b>
<b>Method Statement</b>	Beginning of the project	Contractor	Engineering Specialists	Construction manager	As per contract requirement	Documents submittal <b>DS Form</b>



Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
<b>Kick Off Meeting</b>	Beginning of the project	Site supervisor/ Field Coordinator		Attendees	After the site meeting the Site supervisor will issue the minutes of meeting and will share it with all concerned parties at the end of the meeting for approval.	Minutes of Meeting <b>MOM Kick Of Form</b>
<b>Minutes of Meeting</b>	As needed	Site supervisor/ Field Coordinator		Attendees	After each site meeting the Site supervisor will issue the minutes of meeting and will share it with all concerned parties at the end of the meeting for approval.	Minutes of Meeting <b>MOM Form</b>
<b>Site visit report</b>	As needed	Field Coordinator/ Environmental officer (ECODIT Liban)/ DAWERR engineer/ USAID A&E firm	-	-	Each party visiting the site will prepare a site visit report and will share it with other parties. Comments will be included in the MOM of the next meeting for follow up.	-
<b>QA/QC</b>						



Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
<b>Inspection Request (IR)</b>	As needed	Contractor	Site supervisor/ Field Coordinator	Engineering Specialist	As per contract requirements	Inspection Request <b>IR Form</b>
<b>Non-conformity report (NCR)</b>	As needed	Site supervisor/ Field Coordinator	Engineering Specialist	Construction manager	As needed	NCR
<b><i>Modifications/Changes</i></b>						
<b>Claims</b>	When needed	Contractor	Engineering Specialist/ Manager	Chief of Party	As per contract requirement	Letter (External Document)
<b>Request for Extension of time</b>	When needed	Contractor	Engineering Specialist/ Manager	Chief of Party	As per contract requirement	Letter for extension of time (External Document)
<b><i>Payments</i></b>						



Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
<b>Quantity surveying preparation</b>	When needed	Contractor	Engineering Specialist	Construction manager	As per contract requirement	Bill of Quantity and associated quality control reports on billed items
<b>Request for payment review</b>	When needed	Engineering Specialist	Construction manager, then Supply Chain and Grants Specialist	Chief of Party	Submitted quantities are checked by Engineering Specialist(s), corrected as needed, and forwarded to the Construction Manager. The Supply Chain and Grants Specialist then validates quantities, unit rates, multiplications and totals. COP provides final approval of the above and of payment in order to be forwarded to accounting/finance for payment processing.	Bill of Quantity and associated quality control reports on billed items



Submission	Frequency	Prepared by	Validated by	Approved by	Contract	Record Reference
Interim payment log/Summary	When needed	Procurement Officer	Supply Chains and Grants Specialist	Finance Manager and COP	As per contract requirement	Interim payment log
<i>Handing over/Final acceptance</i>						
Request for provisional handing over	When construction works are completed	Contractor	Site supervisor/ Field coordinator	Construction manager	As per contract requirement	External Letter for provisional handing over
Provisional Handing Over	When needed	Site supervisor/ Field coordinator	Engineering specialists	Construction manager	As per contract requirement	<b>MOM - Handing Over form + Punch List</b>
Request for final handing over	After snag Lists clearance	Contractor	Construction manager	Chief of Party	As per contract requirement	External - Letter for final handing over
Final Handing Over	End of the project	Site supervisor	Construction manager	Chief of Party	As per contract requirement	<b>MOM - Handing Over form + Snag List</b>





**APPENDIX I – EMMP FOR PROVISION AND INSTALLATION OF GENERATOR AND PV SYSTEM FOR RAS  
EL MATN COMPOSTING STATION**

Issue	Mitigation Measures	Means of Assuring that Mitigation Measures are Met
<b><u>Soil and Groundwater Contamination – Generator and Fuel Tank</u></b>		
<b>Soil and groundwater contamination can result from accidental spills or leakages of fuel/oil.</b>	<ul style="list-style-type: none"> <li>The generator should be equipped with proper containments and drip trays in order to avoid soil and/or groundwater contamination. The drip trays should be equipped with a drainage channel with oil trap.</li> </ul>	Provide generator and fuel tank specifications
<b><u>Air Quality - Generator</u></b>		
<b>The usage of the generator will lead to an increase in on-site air pollutant emissions.</b>	<ul style="list-style-type: none"> <li>The generator used must adhere to the MoE stipulation of Decision 16/1 of 2022. If not, proper measures need to be implemented to ensure compliance (such as the installation of filters).</li> </ul>	Provide generator specifications
	<ul style="list-style-type: none"> <li>The Generator Environmental Specifications should be European Stage 4 emission standards or later generations.</li> </ul>	Provide generator specifications
<b><u>Source of Glare – PV Panels</u></b>		
<b>PV panels can produce an annoying source of glare</b>	<ul style="list-style-type: none"> <li>Procure PV panels with anti-reflection coating</li> </ul>	Provide Material Data Sheet for PV Panels

