REQUEST FOR QUOTATION (RFQ)

RFQ Reference: RFQ/123/IND-2021  Date: 03 December 2021


SECTION 1: REQUEST FOR QUOTATION (RFQ)

UNDP kindly requests your quotation for the provision of works as detailed in Annex 1 of this RFQ.

This Request for Quotation comprises the following documents:

   Section 1: This request letter

   Section 2: RFQ Instructions and Data

       Annex 1: Schedule of Requirements

       Annex 2: Quotation Submission Form

       Annex 3: Technical and Financial Offer

When preparing your quotation, please be guided by the RFQ Instructions and Data. Please note that quotations must be submitted using Annex 2: Quotation Submission Form and Annex 3 Technical and Financial Offer, by the method and by the date and time indicated in Section 2. It is your responsibility to ensure that your quotation is submitted on or before the deadline. Quotations received after the submission deadline, for whatever reason, will not be considered for evaluation.

Thank you and we look forward to receiving your quotations.

Issued by:

Signature: 
Name: Arun Arumughan
Title: Procurement Analyst
Date: 03 December 2021
## SECTION 2: RFQ INSTRUCTIONS AND DATA

| **Introduction** | Bidders shall adhere to all the requirements of this RFQ, including any amendments made in writing by UNDP. This RFQ is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement. Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this RFQ. UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website. |
| **Deadline for the Submission of Quotation** | **December 16, 2021**
If any doubt exists as to the time zone in which the quotation should be submitted, refer to http://www.timeanddate.com/worldclock/.

For eTendering submission - as indicated in eTendering system. Note that system time zone is in EST/EDT (New York) time zone.

PLEASE NOTE: -

1. Date and time visible on the main screen of event (on e-tendering portal) will be final and prevail over any other closing time indicated elsewhere, in case they are different. Please also note that the bid closing time shown in the PDF file generated by the system is not accurate due to a technical glitch that we will resolve soon. The correct bid closing time is as indicated in the e-tendering portal and system will not accept any bid after that time. It is the responsibility of the bidder to make sure bids are submitted within this deadline. UNDP will not accept any bid that is not submitted directly in the system.

2. Try to submit your bid a day prior or well before the closing time. Do not wait until last minute. If you face any issue submitting your bid at the last minute, UNDP may not be able to assist.

| **Method of Submission** | Quotations must be submitted as follows:

- **E-tendering**

  Bid submission address: Online UNDP E-tendering Portal

  - File Format: PDF files only
  - File names must be maximum 60 characters long and must not contain any letter or special character other than from Latin alphabet/keyboard.
  - All files must be free of viruses and not corrupted.
  - Max. File Size per transmission: 10 MB
  - It is recommended that the entire Quotation be consolidated into as few attachments as possible.
  - The bidder should receive an email acknowledging email receipt.

  [For eTendering method, click the link https://etendering.partneragencies.org ]

  Detailed instructions on how to submit, modify or cancel a bid in the eTendering system are provided in the eTendering system Bidder User Guide and Instructional videos available on this link: |
<p>| Cost of preparation of quotation | UNDP shall not be responsible for any costs associated with a Supplier’s preparation and submission of a quotation, regardless of the outcome or the manner of conducting the selection process. |
| Supplier Code of Conduct, Fraud, Corruption, | All prospective suppliers must read the United Nations Supplier Code of Conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. The Code of Conduct, which includes <strong>principles on labour, human rights, environment and ethical conduct</strong> may be found at: <a href="https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct">https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct</a> Moreover, UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors to observe the highest standard of ethics during the procurement process and contract implementation. UNDP’s Anti-Fraud Policy can be found at <a href="http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_auditndinvestigation.html#anti">http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_auditndinvestigation.html#anti</a> |
| Gifts and Hospitality | Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches, dinners or similar. In pursuance of this policy, UNDP: (a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract. |
| Conflict of Interest | UNDP requires every prospective Supplier to avoid and prevent conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, specifications, cost estimates, and other information used in this RFQ. Bidders shall strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified. Bidders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this RFQ. 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, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this RFQ, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid. |
| General Conditions of Contract | Any Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the General Conditions of Contract | ☒ <strong>General Terms and Conditions for Works</strong> Applicable Terms and Conditions and other provisions are available at <a href="http://www.undp.org/content/undp/en/home/operations/procurement/business/procurement-notices/resources/">UNDP/How-we-buy</a> |</p>
<table>
<thead>
<tr>
<th>Special Conditions of Contract</th>
<th>☐ Cancellation of PO/Contract if the delivery/completion is delayed by [12 Weeks]</th>
</tr>
</thead>
</table>
| Eligibility                   | A vendor who will be engaged by UNDP may not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations. Failure to do so may result in termination of any contract or PO subsequently issued to the vendor by UNDP.  

It is the Bidder’s responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP.  

Bidders must have the legal capacity to enter a binding contract with UNDP and to deliver in the country, or through an authorized representative. |
| Currency of Quotation | Quotations shall be quoted in:  

Preferred Currency of Bid : Indian Rupees (INR)  

Bids in other currency also allowed.  

Reference date for determining UN Operational Exchange Rate : Date of bid submission. |
| Joint Venture, Consortium or Association | If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for 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 JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted 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 the member entities comprising the joint venture, Consortium or Association.  

Refer to Clauses 19 – 24 under Solicitation policy for details on the applicable provisions on Joint Ventures, Consortium or Association. |
| Only one Bid | The Bidder (including the Lead Entity on behalf of the individual members of any Joint Venture, Consortium or Association) shall submit only one Bid, either in its own name or, if a joint venture, Consortium or Association, as the lead entity of such Joint Venture, Consortium or Association.  

Bids submitted by two (2) or more Bidders shall all be rejected 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 RFQ; 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 RFQ 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) some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this RFQ process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid. |
| Duties and taxes | Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that the United Nations, including UNDP as a subsidiary organ of the General Assembly of the United Nations, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All quotations shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified below:  

**All prices must:**  |
| ☒ be exclusive of GST and other applicable indirect taxes |

| Language of quotation | English  |
| Including documentation including catalogues, instructions and operating manuals. |

| Documents to be submitted | Bidders shall include the following documents in their quotation:  |
| ☒ Annex 2: Quotation Submission Form duly completed and signed  |
| ☒ Annex 3: Technical and Financial Offer duly completed and signed and in accordance with the Schedule of Requirements in Annex 1  |
| ☒ Company Profile.  |
| ☒ Registration certificate;  |
| ☒ Manufacturer’s authorization (if bidder is not manufacturer);  |
| ☒ Descriptive Literature;  |
| ☒ Product safety and test certification by ISO/ IEC 17025 accredited laboratory;  |
| ☒ Documents showing that the bidder has an experience of a minimum of 2 years of supplying the mentioned products Supplies to at least 2 Overseas Ministries / Governments / UN Agencies /WHO across the globe/ Global Health Institutions/ Programs / Pvt. Institutions (Proof of purchase/work order is to be submitted plus client’s contact details who may be contacted for further information on those contracts);  |
| ☒ Statement of satisfactory Performance (Certificates) from the top two clients in terms of Contract value in similar field;  |

| Quotation validity period | Quotations shall remain valid for 90 days from the deadline for the Submission of Quotation. |

| Price variation | No price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted at any time during the validity of the quotation after the quotation has been received. |

| Partial Quotes | ☒ Not permitted |

| Alternative Quotes | ☒ Not permitted |
| Payment Terms | Within 30 days upon UNDP’s acceptance and receipt of invoice. (Please also refer to payment terms under Annex 1 – Schedule of Requirements).

The bill will be processed after verification from Technical Expert and endorsement by Project Manager. |
| Conditions for Release of Payment | ☒ Written Acceptance of Goods, Services and Works, based on full compliance with RFQ requirements
☒ 60% - on delivery of materials at UNDP campus in good condition (Refer Appendix : Consignee Acceptance Certificate).
☒ 40% - on successful installation, testing and commissioning and issue of completion certificate issued by responsible UNDP officials (Refer – Appendix : Satisfactory Installation, Training & Commissioning Certificate). |
| Contact Person for correspondence, notifications and clarifications | Email Address for submitting clarifications/questions: manikandan.srinivasan@undp.org
Please write to Mr Debashis Banerjee at debashis.banerjee@undp.org for site visit/ more information about the location.

Attention: Quotations shall not be submitted to this address but to the address for quotation submission above. Otherwise, offer shall be disqualified.

Any delay in UNDP’s response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers. |
| Clarifications | Requests for clarification from bidders will not be accepted any later than 3 days before the submission deadline. Responses to request for clarification will be communicated thru email/ Posted directly to eTendering portal. |
| Evaluation method | ☒ The Contract or Purchase Order will be awarded to the lowest price substantially compliant offer |
| Evaluation criteria | ☒ Full compliance with all requirements as specified in Annex 1
☒ Full acceptance of the General Conditions of Contract

The technical bids shall be evaluated on a pass/fail basis for compliance or non-compliance with the technical specifications identified in the bid document.

*Compliance on the following requirements*

☑ Registration certificate;

☑ Manufacturer’s authorization (if bidder is not manufacturer).

☑ Documents showing that the bidder has an experience of a minimum of 2 years of supplying the mentioned products Supplies to at least 2 Overseas Ministries / Governments / UN Agencies /WHO across the globe/ Global Health Institutions/ Programs / Pvt. Institutions (Proof of purchase/work order is to be submitted plus client’s contact details who may be contacted for further information on those contracts);

☑ Statement of satisfactory Performance (Certificates) from the top two clients in terms of Contract value in similar field;
| **Right not to accept any quotation** | UNDP is not bound to accept any quotation, nor award a contract or Purchase Order |
| **Right to vary requirement at time of award** | At the time of award of Contract or Purchase Order, UNDP reserves the right to vary (increase or decrease) the quantity of services and/or goods, 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. |
| **Type of Contract to be awarded** | ☑ Contract for Goods and/or Services to UNDP [http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html](http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html) |
| **Expected date for contract award.** | 23 December 2021 |
| **Publication of Contract Award** | UNDP will publish the contract awards valued at USD 100,000 and more on the websites of the CO and the corporate UNDP Web site. |
| **Policies and procedures** | This RFQ is conducted in accordance with UNDP Programme and Operations Policies and Procedures |
| **UNGM registration** | Any Contract resulting from this RFQ exercise will be subject to the supplier being registered at the appropriate level on the United Nations Global Marketplace (UNGM) website at [www.ungm.org](http://www.ungm.org). The Bidder may still submit a quotation even if not registered with the UNGM, however, if the Bidder is selected for Contract award, the Bidder must register on the UNGM prior to contract signature. |
ANNEX 1: SCHEDULE OF REQUIREMENTS

TECHNICAL SPECIFICATIONS

1. GENERAL REQUIREMENT AND INFORMATION

(a) Applicable Standard
The design, materials, manufacture, testing, inspection and performance of all electrical and electromechanical equipment shall, unless otherwise specified in the Technical Specifications, comply with the latest revision of the following standards;

- The International Electrotechnical Commission Standard (IEC)
- The Institute of Electrical and Electronics Engineers (IEEE)
- Underwriters Laboratories (UL)
- Bureau of Indian Standard (BIS)
- International Organization for Standardization (ISO)

In case IEC, IEEE, UL, BIS, ISO standards are not applicable to the proposed equipment, materials, testing, inspection and parts thereof, other international and national standards applied shall satisfy that the quality of the design, material and equipment offered are equal to or better than that specified in IEC, IEEE, UL, BIS, ISO upon written approval of the Employer and Employer’s Representative supervisor.

If the Technical Specifications conflict in any way with any or all of the above standards or codes, the Technical Specifications, upon confirmation of the Employer and/or Employer’s Representative supervisor, shall have precedence and shall govern.

(b) Units of Measurement
In all correspondence, technical schedules, drawings and documents and in all scales of the measuring instruments, the international system of units (SI) shall be applied unless otherwise required. Metric system and Celsius temperature can be employed as the measurement units. In case other units have been used in drawings and printed literatures, the equivalent metric measurement shall be written in addition.

(c) Language
All documents, correspondence, drawings, reports, schedules and instructions shall be written in English. Nameplates and rating plates, duty labels and instruction plates or labels and warning notices shall also be written in English. The Contractor shall propose the entries, sentences and wordings in English for the labels and plates to the Employer and/or Employer’s Representative supervisor.

(d) Site Conditions
The bidder is responsible for its own investigation to establish sufficient and accurate information for the design of Battery Energy Storage System (hereinafter referred to as “BESS”) with Power Conditioning System (hereinafter referred as “PCS”) operating together with existing grid system and Rooftop PV system installed in the UNDP
campus. The Bidder shall visit the proposed site and shall ascertain the nature and location thereof and all conditions which may affect design/layout of the system and project cost.

(e) Climate Conditions

Unless otherwise specified, all the Equipment and materials shall be suitably designed covering the following climatic conditions;

- Ambient temperature range: +5°C to +45°C
- Maximum average humidity: 90%
- Altitude: 216 m (above mean sea level)
- Basic wind speed: 47 m/sec

The bidder shall make its own assessment of any and all of the information provided in this bid and collect own information. Neither the Employer nor any representative or adviser is responsible for the accuracy or completeness of any such information.

(f) Grid Infrastructure

The power supply grid network of UNDP campus is 3 Phase 4 Wire 415V. Sanctioned load/contract demand is 786.5 kW/845.7kVA supplied by New Delhi Municipal Council. A single line diagram will be shared at the time of pre-bid site visit.

(g) Grid Connected PV System

Rooftop PV array capacity is 165kWp and aggregated capacity inverters is 150kW (4 x 25 kW + 1 x 50 kW).

(h) Diesel Generator

Not in operation at present and there is no plan to operate the same in the future.

2. BATTERY ENERGY STORAGE SYSTEM (BESS)

(a) The Functions of the BESS System (with PCS and EMS)

i. The BESS System shall be able to charge/discharge energy in accordance with the Energy Management System (EMS) command control.

ii. Charge/discharge profile of Battery shall be arbitrarily set in monitoring and control system.

iii. PCS shall convert DC energy to AC energy by synchronizing with grid.

iv. Protective functions shall disconnect the connection from the AC supply system in the event of a failure of either the PCS, BESS system or AC power supply system.

v. The monitoring and control system shall monitor the status of the Li-ion storage battery, store operation data, and remotely control the BESS.

vi. Even if a single battery or whole battery panel (string) has major failure, operation of the BESS system shall continue by disconnecting the failed battery or battery panel (string) automatically.
vii. PCS system shall be able to operate the active power control.

viii. The BESS system shall be able to discharge 150 kW (at AC side terminal of PCS) for at least 1 hour to supply energy to selected loads.

ix. If cooling fan is designed for each battery or by battery group then it shall be installed separately (not combined with battery or battery pack/unit as a set) and shall be possible to replace/change independently, without any disturbance to the exchange or maintenance of battery, when required.

x. Smoke/heat detecting device shall be installed in the containers and shall connect with the monitoring and control system displaying alarm at time of failure.

xi. Minimum One (1) fire extinguisher for BEES system shall be installed in the container.

(b) Storage Battery

The applicable detail specification of battery is as mentioned below

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Lithium-ion (Li-ion) Battery</td>
</tr>
<tr>
<td>Total Power</td>
<td>150 kW (capacity shall be at PCS AC side output terminal)</td>
</tr>
<tr>
<td>Rated Capacity per cell</td>
<td>(Bidder’s design x 1) Ah @ 1.0CA</td>
</tr>
<tr>
<td>Discharge per Cell</td>
<td>(Bidder’s design x 3) Ah or more @ 3.0CA</td>
</tr>
<tr>
<td>Required total Battery Capacity</td>
<td>Minimum storage capacity of BESS shall be such that it can provide minimum 1 (one) hour uninterrupted backup power for 150 kW load connected to the PCS with Maximum 80% Depth of Discharge of the battery.</td>
</tr>
<tr>
<td>Guaranteed Cycle Life</td>
<td>Minimum 5,000 cycles, at DOD (Depth of Discharge) 80% or above at rated power, and remaining battery capacity (State of Charge, SoC) shall be equivalent or above 80% at the end of above life cycle. The bidder shall provide a lifetime graph from the manufacturer showing number of cycles vs. DOD.</td>
</tr>
<tr>
<td>Design Life</td>
<td>Minimum 10 years with a minimum warranty of 5 years against any manufacturing defect or non compliance of specifications.</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>0 to +45°C</td>
</tr>
</tbody>
</table>

(c) Standards for Battery System

The following Code and Standards shall be applicable for the project as shown below:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>or UL 1642</td>
<td>Safety requirements</td>
</tr>
</tbody>
</table>
(d) **Battery Management System (BMS)**

The energy management system (EMS) shall be able to grasp the accurate status of battery State of Charge (SOC) to manage and operate BESS adequately to set the Upper Limit (UL) and Lower Limit (LL) of the storage amount of the storage battery for the time. The battery management system shall be capable of monitoring voltage and cell temperature at cell level and it will monitor voltage, current and temperature at system level. The BMS will automatically calculate battery state of charge (SOC) and battery state of health (SOH).

The following protection will be provided by the BMS:
- i. Over charge (Cell level and system level)
- ii. Over discharge (cell level and system level)
- iii. Over temperature (cell level)
- iv. Over current
- v. Short circuit
- vi. Cell unbalance

(e) **Power Conditioning System (PCS)**

The PCS shall operate and support connected loads in the UNDP office premises. The PCS shall synchronize with the LV grid network before connection is established. The applicable detail specification of PCS is as mentioned below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Indoor self–standing type (Installation inside Container)</td>
</tr>
<tr>
<td>Quantity</td>
<td>One (1)</td>
</tr>
<tr>
<td>Rated Capacity</td>
<td>150 kW or more, possible to supply and Charge/Discharge at maximum rating and efficiency.</td>
</tr>
<tr>
<td>Overloading capacity</td>
<td>110% for 60 minimum seconds</td>
</tr>
<tr>
<td>Input</td>
<td>DC input shall specify by contractor/manufacturer</td>
</tr>
<tr>
<td>Output</td>
<td>AC 415V (±10%), 3 Phase 4Wire, 50Hz</td>
</tr>
<tr>
<td>Rated Efficiency</td>
<td>Over 98%</td>
</tr>
</tbody>
</table>
| Function          | 1) Power backup  
                    2) Voltage and frequency monitoring  
                    3) Automatic voltage and Frequency regulation  
                    4) Battery efficient charge/discharge capability  
                    5) EMS command controlled start/stop and soft start |
<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Protections | The protection relays for AC system and DC system (Battery) side. The protection relays shall be possible to adjust at variable ranges and all setting shall be possible to adjust at site.  
1) Over Voltage Relay (OVR)  
2) Under Voltage Relay (UVR)  
3) Over Frequency Relay (OFR)  
4) Under Frequency Relay (UFR)  
5) Inbuilt Surge Protection Device (Type I +II) in both AC side and DC side  
6) Islanding Operation protection (Both passive and active method)  
7) LVRT, HVRT (FRT)  
8) Black start capability  
9) Ground fault or leakage current detection |
| Harmonics and Waveform Distortion | The harmonic distortion for single unit shall be 3% or less |
| Communication | Local monitoring / display, built in data logger for at 5 years data collection, emergency power off and field bus communication |
| Warranty | Power Conditioning System (PCS) and its associated electrical and electronics items shall have a warranty of minimum 5 years (60 months) from the date of commissioning with a provision for extension of warranty period for another 5 years at an additional cost. The warranty will cover defects and/or failures due to manufacturing defects and/or failures due to materials and non-conformity to specifications and national grid codes due to faulty manufacturing and/or inspection processes. |

(f) Standard for PCS  
The following code and standard shall be applicable for the project as shown below:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC 62040-1 or IEC 62477-1</td>
<td>General and safety requirement</td>
</tr>
<tr>
<td>IEEE 1547</td>
<td>Standard for interconnection to grid</td>
</tr>
<tr>
<td>IEC 61683</td>
<td>Procedure for measuring efficiency</td>
</tr>
<tr>
<td>IEC 60068-2 (1,2,14,30)</td>
<td>Environmental testing</td>
</tr>
<tr>
<td>IEC 61000-4-2,3,4,6, &amp; 8</td>
<td>EMC</td>
</tr>
<tr>
<td>IEEE 519</td>
<td>Harmonics</td>
</tr>
<tr>
<td>CEA, IEC 62910</td>
<td>LVRT and HVRT</td>
</tr>
<tr>
<td>IEC 60529</td>
<td>IP Test</td>
</tr>
</tbody>
</table>
(g) Energy Management System (EMS)

The energy management system shall be capable to provide grid dispatch interface and energy management for the BESS. It will interface with BESS, PCS, grid, load and solar PV inverters. EMS will control the PCS as per demand and dispatch power to the load/grid from battery. EMS shall be able to schedule demand limit to shave peak demand as per TOD tariff and load profile. EMS shall be able to regulate frequency-watt curve, by fast action power control on the battery and grid.

(h) Distribution Board

Output of PCS shall be connected to three different existing LT panels in UNDP office building namely West Wing, East Wing and Central Wing. The Distribution Board of BESS system shall be design accordingly. The Distribution Board shall preferably be installed inside container. In case the same is installed outside, enclosure protection level must be IP-65 or above.

The distribution board shall be self-supporting indoor use, metal enclosed type, dust and vermin proof construction, and shall comply with IEC. All meters, relays and control handles shall be mounted on the front surface of the panel. The Distribution Board shall be completed with required circuit breakers, necessary wiring, instrument transformers, terminals, grounding bus and terminals, indicating lamps, handles, and other necessary accessories.

(i) Container

The BESS system with cooling system shall be installed inside a ISO 1D 10-foot type container. The size of each container shall not be larger than 10-foot type. The container will accommodate Li-ion battery bank, battery management system, PCS, fire suppression system, electrical distribution panel, battery HVAC and energy management system. For installation of container, flat concrete base shall be designed considering the total weight of container with component and instruments installed inside. The container shall be weather resistance, water proof, dust proof, vermin proof and body of container shall be electrically grounded.

(j) Marking and Signages

A device number shall be allocated for every electrical and mechanical control device, switch, relay, detector and other important components and shall be shown on the Contractor’s comprehensive circuit and flow diagrams. The Contractor shall apply a label of approved form to every device, showing the device number in a legible and permanent manner.

The Contractor shall provide warning notices and signs associated with the equipment with a form and wording to suite the Employer’s rules. Such notices and signs shall be written in English.

3. CABLES AND WIRING

(a) General

The power and control cables shall be continuous between terminals, and no junction shall be made in the cable ducts and conduits. The power and control cables shall be laid in the cable ducts or conduits after they have been cleaned. Oil or grease shall not be used as a lubricant for cable laying work, but an approved compound may be
used for this purpose. Where the cables and wires are installed in the conduits, they shall be pulled into a conduit as a bundle to avoid twisting and abrasive actions caused by single conductor pulling.

Wiring shall be suitably grouped, neatly and securely be bunched or cleated, and shall be installed as applicable in the wiring ducts. A suitable wiring duct system shall be provided for inter-panel and front-to-rear panel wiring to provide easy access for inspection and maintenance. All wiring from hinged door panel to the fixed panel shall be done by using of flexible conductors or spiral conduct. Exposed wiring shall be kept to minimum, but where used they shall be bunched and protected properly. The bunching of wiring shall be kept in bunched condition by means of strips of special plastic ribbon material at suitable intervals. Lacing of wire bunched with textile or plastic cord or metal buckle type clips will not be accepted. Wherever wiring is cleated to metalwork, it shall be insulated from the metal surface and shall be created by means of insulated straps in an approved manner. All wiring shall be left sufficiently long and neatly looped to allow a fresh termination to be made, should be original termination device break off. Wiring between terminals of the various devices shall be point to point. Splices or tee connection will not be acceptable.

(b) Power cable

Output of PCS shall be connected to three different existing LT panels in UNDP office building namely West Wing, East Wing and Central Wing. These LT panel are connected with main supply by 3.5C x 185 mm² armoured Aluminium cables. Similar cables may be used to connect these LT panels with PCS. Approximate cable route distance from identified location for BESS container to these LT panels are 30m (West Wing), 55m (Central Wing and 80m (East Wing).

(c) Earthing

The frames of all electrical apparatus, equipment and the bases of all structural steel works shall be connected to the earth grid by branch conductors having proper cross-sectional areas considering the maximum ground/ earth fault currents. The outer frame of metal container shall be earthed to protect from inducement thunder. The resistivity shall be below 10 ohms at minimum. The earth grid and conductor having proper cross-sectional areas shall be used considering the maximum ground/ earth fault currents.

4. SPARE PARTS AND CONSUMABLE MATERIALS

The following spare parts for the BESS and PCS and related component/equipment shall be provided by Contractor, but not limited to. If any other spare parts are necessary other than listed below for smooth and efficient operation of the system, then it shall be included providing reasonable reasons and price of such spare parts and consumable amount shall be deemed to be included in the contract.

- Fuses for all ratings: 10 sets each
- Signal lamp and indicator lamp of all types: 5 sets each
- Circuit breakers such as ACB, MCCB, ELCB of all ratings: 2 sets each
- Measuring/display instruments, relays and selector switches of all type: 2 sets each
- Data transducers of all type: 2 sets each
- Dust protection filters for all enclosures types: 5 sets each
5. INSTALLATION WORK

(a) Safety

The Contractor shall prepare and implement a Site Safety Plan that shall include fire protection, emergency situations procedures and hazardous material control. The Contractor shall appoint a responsible representative in charge of safety control in the installation teams during the entire period of the Installation Work. The personnel shall have the ability and authority to take emergency measures when trouble occurs at the Site.

Necessary protective equipment shall be employed to prevent any accidents to persons and damage to the Equipment and the existing facilities during the Installation Work.

The Contractor shall be responsible for providing necessary safety training to the work-force employed by himself and his local subcontractor(s).

The Contractor shall prepare and implement a Site Security Plan consulting together with UNDP. The Contractor shall cooperate with the Employer and Employer’s Representative on all security matters base on their guidance.

(b) Dangerous Materials

The Contractor shall not use explosives, radioactive, or other dangerous materials without prior notification to the Employer and Employer’s Representative. The Contractor shall be responsible for the proper handling, transporting, storage, and the use of such materials or methods shall also be notified to the Employer and Employer’s Representative. The Contractor shall exercise the utmost care and carry such activities under supervision of properly qualified personnel. The Contractor at his expense shall repair any damage caused by its handling, transporting, storage, and use, and shall be responsible for obtaining permits as applicable.

(c) Waste Disposal

The Contractor shall be responsible for remove and lawful disposal of all discarded material, debris, rubbish, unusable material and waste including hazardous substances, if any, generated by the Contractor and his subcontractors during the Installation Work of the Site.

(d) Restoration of original environmental condition

The Contractor shall restore the original environmental condition for remaining open space after the completion of the Installation Work.

When BESS module is installed, the following cautions shall demand for prevention of electric shock.

i. The metal terminal of battery module shall not be touched by any naked part of human body or any metal surface.

ii. The connection Works shall be not performed until all battery units are installed, checked and verified by contractor’s supervisor.

iii. The polarity of electrode shall be checked after installation before connection and connection of each battery module shall be carried out under supervision of contractor’s supervisor.
6. TEST AND INSPECTION

(a) General
The Contractor shall carry the following test before shipment at manufacture’s factory in accordance with test procedure approved by the Employer and Employer’s representative. If material to be installed is manufactured in Recipient country than the test and inspection shall be conducted at Recipient country before installation.

The Contractor shall carry the following test of the Equipment on Completion at site in accordance with test procedure approved by the Employer and Employer’s representative. The Contractor shall provide all required tools and instruments for test at site.

(b) Test at Contractor’s/Manufacture’s Factory
The Factory Acceptance Test (FAT) shall be performed on the following items as mentioned below

**Battery storage system:**

i. Appearance inspection
ii. Open circuit voltage test
iii. Insulation resistance test
iv. Battery Cell Capacity measurement test report

The report of Battery Cell capacity measurement test shall satisfy the following:

- The actual measurement data of battery capacity shall be 80% or more compared to the initial storage in the condition that when discharged rate is “3C” and above, SOC operating range is 0 – 80%, having 5,000 or more charge/discharge cycles.
- The discharge rate shall be 3C or more than that designed on the system.

If the test data does not satisfy the above-mentioned storage capacity 80% or more, then the report indicating battery storage capacity and formula for calculation shall be submitted to certify 80% or more.

v. Safety test (Short circuit test) report

The internal and external short circuit test data report of battery cell shall satisfy the following:

The battery cell temperature shall be stable under the internal and external short circuit condition of 120 minutes.

If test data does not satisfy the above condition, Safety Analysis Report (SAR) indicating the temperature rise safety by other treatment shall be submitted.

vi. Crash test report

The crash test data report shall satisfy the following:
- There shall be no occurrence of a fire when an internal short circuit due to deterioration occurs.
- Crash test certificate in compliance with IEC 62660-2 shall be submitted.

**Power Conditioning System**
i. Appearance inspection  
ii. Function test  
iii. Efficiency conversion test  
iv. Sequence test  
v. Insulation resistance test  
vi. Power frequency withstand voltage test  
vii. Protection relay function test  
viii. Harmonic and waveform distortion test

(c) Tests and Inspections at the Site

i. Pre-commissioning (Field) Tests

The Contractor shall carry out the following pre-commissioning (field) tests during or after completion of the Installation Work to check individual or collective function of the Equipment and to make necessary adjustments and setting for the optimum operation in the presence of the Employer and Employer’s representative. The contractor shall submit time schedule and details of tests at least two (2) working days prior then the proposed test date.

If any portion on of the work fails to pass the tests, the tests shall be repeated within a reasonable time.

The Contractor shall prepare the testing and measurement apparatus required for the per-commissioning (field) test.

**BESS system (including PCS)**
- Appearance inspection  
- Insulation resistance test  
- Open circuit Voltage (Voc) of each Battery panel/string

**Distribution Board**
- Appearance inspection  
- Function test  
- Insulation resistance test

**Container**
- Appearance inspection  
- Installation inspection  
- Grounding connection inspection

(ii) Commissioning and Guaranty Test

The Contractor shall carry out the commissioning and Guaranty test in the presence of the Employer and/or Employer’s representative to demonstrate that the entire equipment is properly installed and to ensure the performance of the whole system after the completion of installation and connections.

The tests shall be conducted in accordance with the test procedures approved by the Employer and/or Employer’s representative.
Final results of all shall be subject to acceptance by the Employer and/or Employer’s representative, and shall satisfy the Technical Particulars, given in the Contract.

For the approval, the contractor shall submit detail commissioning and guaranty test procedure with time schedule at least seven (7) working days prior then the proposed commissioning and guaranty test date. At the time of commissioning and guaranty test, following approved documents shall be submitted.

- System description document
- Functional description document
- System configuration document
- Construction and installation drawings
- Equipment drawing and specification
- Wiring Diagrams
- O & M manual
- Test reports of BESS and PCS Factory Acceptance Test, Pre-Commissioning test

7. OPERATION AND MAINTENANCE TRAINING
The contractor shall provide the training to the Employer’s staff/selected personal. The training for system operators and operation maintenance staff shall be conducted at the site after all items of the Works have been manufactured, installed and commissioned. All the training cost shall be deemed to be included in the contract.

8. TECHNICAL DOCUMENTS
After all Works items have been manufactured, installed and commissioned, the Contractor shall prepare and submit following documents and reports within 10 days from the date of completion certificate. Total three (3) sets of both hard copy and soft copy documents shall be submitted to Employer and Employer’s representative.

(a) As-built drawing
As-built drawings based on the approved drawings for the Works shall be submitted. The as-built drawings shall show all changes and modifications, which have been made during the construction, manufacturing of the Equipment, and be presented in the workshop and/or installation at the Site.

The hard copy of all as-built drawings shall be in A3 size and bound properly into books of A3 format.

(b) O & M Manual
The Contractor shall provide final version of O & M manual including all the Questions, Doubts and related answers made timely together with answers explained during the training course.

(c) Certificates
The below certificate shall be provided
- Manufacturers Guaranty certificate of Energy meters, flow meters and equipment’s
- Calibration certificate of Energy meters and Flow meter
Note:
1. The products/goods must be recalled by the manufacturer/ bidder/ supplier at the manufacturers/ bidder/ suppliers cost if rejected by UNDP because of the problems with product specification or quality. The supplier/ bidder/ manufacturer will be obliged to replace the product in question at its own cost with a new product of acceptable quality.
2. The supplier will be responsible for protection of materials, property and equipment before successful delivery and handover to UNDP.
3. Unit prices quoted must be inclusive of all costs necessary to supply these items, including delivery, warranty, transport cost, insurance, materials, etc.

Delivery Requirements

<table>
<thead>
<tr>
<th>Delivery Requirements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delivery date and time</strong></td>
<td>Bidder shall complete the works within 4 Weeks from issuance of Contract.</td>
</tr>
<tr>
<td><strong>Delivery Terms</strong></td>
<td>DAP</td>
</tr>
<tr>
<td>(INCOTERMS 2020)</td>
<td></td>
</tr>
<tr>
<td><strong>Customs clearance</strong></td>
<td>Shall be done by:</td>
</tr>
<tr>
<td>(must be linked to INCOTERM)</td>
<td>☒ Supplier/bidder</td>
</tr>
<tr>
<td><strong>Exact Address(es) of Delivery Location(s)</strong></td>
<td>UNDP India Office. 55, Joseph Stein Lane, Lodhi Gardens, Lodhi Estate, New Delhi, Delhi 110003, India</td>
</tr>
<tr>
<td><strong>Distribution of shipping documents (if using freight forwarder)</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Packing Requirements</strong></td>
<td>Container based BESS solutions as per the schedule of requirements</td>
</tr>
<tr>
<td><strong>Training on Operations and Maintenance</strong></td>
<td>As per the schedule of requirements</td>
</tr>
<tr>
<td><strong>Warranty Period</strong></td>
<td>As per the schedule of requirements</td>
</tr>
<tr>
<td><strong>After-sales service and local service support requirements</strong></td>
<td>As per the schedule of requirements</td>
</tr>
<tr>
<td><strong>Preferred Mode of Transport</strong></td>
<td>Surface/ Air</td>
</tr>
</tbody>
</table>
ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder’s Declaration, sign it and return it as part of their quotation along with Annex 3: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:  

RFQ reference: RFQ/123/IND 2021  

Date:  

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal name of bidder or Lead entity for JVs</td>
<td></td>
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<tr>
<td>Legal Address, City, Country</td>
<td></td>
</tr>
<tr>
<td>Website</td>
<td></td>
</tr>
<tr>
<td>Year of Registration</td>
<td></td>
</tr>
<tr>
<td>Legal structure</td>
<td></td>
</tr>
</tbody>
</table>
| Are you a UNGM registered vendor?                         | ☐ Yes ☐ No  
If yes, insert UNGM Vendor Number                      |
| Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate): | ☒ Yes ☐ No |
| Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate): | ☒ Yes ☐ No |
| Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy) | ☒ Yes ☐ No |
| Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable | ☒ Yes ☐ No |
energies or membership of trade institutions promoting such issues (If yes, provide a Copy)

Is your company a member of the UN Global Compact ☑ Yes ☐ No

Bank Information

Bank Name:
Bank Address:
IBAN:
SWIFT/BIC:
Account Currency:
Bank Account Number:

Previous relevant experience

<table>
<thead>
<tr>
<th>Name of previous contracts</th>
<th>Client &amp; Reference Contact Details including e-mail</th>
<th>Contract Value</th>
<th>Period of activity</th>
<th>Types of activities undertaken</th>
</tr>
</thead>
</table>

Bidder’s Declaration

☐ ☐ Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, Schedule of Requirements, the General Conditions of Contract, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them.

☐ ☐ I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period.

☐ ☐ Ethics: In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ; has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer.

☐ ☐ I/We confirm to undertake not to engage in proscribed practices, or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we have read the United Nations Supplier Code of Conduct: https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN.

☐ ☐ Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organisation’s Point of Contact.
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</table>

Signature: ________________________________
Name: ________________________________
Title: ________________________________
Date: ________________________________
ANNEX 3: TECHNICAL AND FINANCIAL OFFER – GOODS & SERVICES

Bidders are requested to complete this form, sign it and return it as part of their quotation along with Annex 2 Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:

RFQ reference: RFQ/123/IND-2021 Date:

Technical Offer

Provide the following:

- a brief description of your qualification and capacity that is relevant to the Scope of Works;
- a brief method statement and implementation plan;
- detailed specifications, including make, complying standards, relevant test certificate as applicable for each of the component proposed to be supplied by the agency under the tender in line with the schedule of requirements.

Financial Offer

(This Form must be submitted only using the Supplier’s Official Letterhead/ Stationery)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Item description</th>
<th>Quantity (Nos.)</th>
<th>Currency</th>
<th>Unit Price -DAP Incoterm 2020 Final Destination (All inclusive)</th>
<th>Final Price - DAP Incoterm 2020 Final Destination (All inclusive)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Other cost, if any</td>
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<td></td>
<td>Duty/ Tax (Nature and amount of each tax / duty component should be clearly specified)</td>
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</tr>
<tr>
<td></td>
<td>Total</td>
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</tbody>
</table>

PROVIDED THAT A CONTRACT IS ISSUED BY UNDP WITHIN THE REQUIRED BID VALIDITY PERIOD, THE UNDERSIGNED HEREBY COMMITS, SUBJECT TO THE TERMS OF SUCH CONTRACT, TO FURNISH ANY OR ALL ITEMS AT THE PRICES OFFERED AND TO DELIVER SAME TO THE DESIGNATED POINT(S) WITHIN THE DELIVERY TIME STATED IN ANNEX-1.

COMPANY NAME

AUTHORIZED SIGNATURE DATE

ADDRESS

PHONE NO. FAX NO.

NAME OF AUTHORIZED SIGNATORY (TYPE OR PRINT)

EMAIL ADDRESS OF CONTACT PERSON WEB SITE:

FUNCTIONAL TITLE OF SIGNATORY

NOTE: Quoted price must be inclusive of all costs necessary to supply these items, including delivery, warranty, transport cost, insurance, materials, installation, training and commissioning etc.
## Compliance with Requirements

<table>
<thead>
<tr>
<th></th>
<th>Yes, we will comply</th>
<th>No, we cannot comply</th>
<th>If you cannot comply, pls. indicate counter-offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Lead Time</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Validity of Quotation</td>
<td>☐</td>
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<tr>
<td>Payment terms</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Other requirements <em>pls. specify</em></td>
<td>☐</td>
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</tbody>
</table>

I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted.

<table>
<thead>
<tr>
<th>Exact name and address of company</th>
<th>Authorized Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Name</td>
<td>Date:</td>
</tr>
<tr>
<td>Address:</td>
<td>Name:</td>
</tr>
<tr>
<td>Phone No.:</td>
<td>Functional Title of Authorised Signatory:</td>
</tr>
<tr>
<td>Email Address:</td>
<td>Email Address:</td>
</tr>
</tbody>
</table>
APPENDIX

"CONSIGNEE ACCEPTANCE CERTIFICATE"
(To be given by consignee’s authorized representative)

The following goods have been received.

1. Name of the item supplied (with Make & Model):-

2. Purchase Order/Contract No: -

3. Name of the Supplier: -

4. Schedule No: -

5. No. of Units supplied: -

6. Place of destination: -

7. Invoice No. & Date: -

8. Name and Address of the Consignee: -

9. Date of receipt by the Consignee: -

The undersigned hereby certifies that the aforesaid goods have been received in good working condition and accepted.

Signature________________
Name_____________________
Designation with stamp_____
Date________

Countersigned by:
Signature________________
Name_____________________
Date____

NOTE  This certificate is to be filled up and issued by authorized representative of the consignee and is to be duly stamped and countersigned by the supervisor.
SATISFACTORY INSTALLATION, TRAINING & COMMISSIONING CERTIFICATE

This is to certify that the goods as detailed below have been satisfactorily installed and commissioned and training provided in respect of their operational use:

a) Purchase Order/ Contact No: __________________________ date _______________

b) Description of the machinery (with make & model no.): _______________________

c) Batch/Serial Number(s) of the goods: __________________________

d) Quantity: __________________________

e) Name of the consignee: __________________________

The supplier has fulfilled his contractual obligation with regard to the following services:

a) Satisfactory Installation, Performance and commissioning/start-up of machinery.

b) Furnishing of tools required for assembly and / or maintenance of the ……………………

……………. (Enter name of machinery with make & model)

c) Furnishing detailed operation and maintenance manual for each item of supply at each location.

d) Training of the operators/users in operating the equipment to the satisfaction of the consignee.

Signature________________
Name____________________
Designation with stamp____
Date_______

Countersigned by:
Signature________________
Name____________________
Date____

NOTE  This certificate is to be filled up and issued by representative of the consignee and is to be duly stamped and countersigned by the supervisor.