**GOVERNMENT OF INDIA**  
&  
**GOVERNMENT OF GUJARAT**  
INTEGRATED COASTAL ZONE MANAGEMENT PROJECT  
STATE PROJECT MANAGEMENT UNIT  
GUJARAT ECOLOGY COMMISSION  
Block No. 18, 1st Floor, Udhyog Bhavan,  
Sector 11, Gandhinagar-382011, Gujarat  
*Credit No. # 4765 – 0 IN*  
RE- INVITATION  

**NATIONAL COMPETITIVE BIDDING FOR**  
SUPPLYING & INSTALLATION AND COMMISSIONING OF SOLAR RENEWABLE ENERGY APPLICATION

<table>
<thead>
<tr>
<th>BID REFERENCE</th>
<th>IFB No.SPMU/GEC/NCB/02/2017-18</th>
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<tr>
<td>PERIOD OF SALE OF BIDDING DOCUMENT</td>
<td>FROM 21.08.2017 TO 20.09.2017 up to 17:00 Hrs.</td>
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<tr>
<td>DATE AND TIME OF PRE-BID MEETING</td>
<td>04.09.2017 12.00 Hrs.</td>
</tr>
<tr>
<td>LAST DATE AND TIME FOR RECEIPT OF BIDS</td>
<td>21.09.2017 Up to 12.00 Hrs.</td>
</tr>
<tr>
<td>DATE AND TIME OF OPENING OF BIDS</td>
<td>21.09.2017 At 12.30 P.M.</td>
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</tbody>
</table>
| PLACE OF OPENING OF BIDS | State Project Management Unit, Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan  
Sector 11, Gandhinagar-382011, Gujarat  
Phone: 079 23257656, 079 23257658, 079 23257659  
Fax: 079 23257657 |
| OFFICER INVITING BIDS | Addl. Project Director  
State Project Management Unit  
Integrated Coastal Zone  
State Project Management Unit  
Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan,  
Sector 11,  
Gandhinagar-382011, Gujarat  
Phone: 079 23257656, 079 23257658, 079 23257659, 079 23257659,  
Fax: 079 23257657 |
INVITATION FOR BIDS (IFB)
INTEGRATED COASTAL ZONE MANAGEMENT PROJECT
STATE PROJECT MANAGEMENT UNIT
GUJARAT ECOLOGY COMMISSION
Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat
Credit No. # 4765 – 0 IN

IFB No. .SPMU/GEC/NCB/02/2017-18 Date: 21.08.2017

1. This Invitation for Bids follows the General Procurement Notice for this Project that appeared in Development Business, Issue # 774 of April 30, 2010.

2. The Government of India has received a credit from the International Development Association towards the cost of Integrated Coastal Zone Management Project and it intends to apply part of the proceeds of this credit to payments under the Contract for Supplying & Installation and commissioning of Solar Renewable Energy Applications for Gujarat Ecology Commission under ICZMP-Gujarat, Gandhinagar.

3. Addl. Project Director, State Project Management Unit, Integrated Coastal Zone Management Project, Gandhinagar now invites sealed bids on behalf of Gujarat Ecology Commission, Gandhinagar for supply of the following items -

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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>a) 3 kW Capacity</td>
<td>No</td>
<td>71 Nos.</td>
<td></td>
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<tr>
<td></td>
<td>b) 5 kW Capacity</td>
<td>No</td>
<td>1 No.</td>
<td>3,92,500.00</td>
</tr>
<tr>
<td>2</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>Set</td>
<td>11 Set</td>
<td>2,20,000.00</td>
</tr>
</tbody>
</table>

4. Bidding will be conducted through the National Competitive Bidding (NCB) procedures specified in the World Bank’s Guidelines: Procurement under IBRD Loans and IDA Credits, January 2011, and is open to all bidders from Eligible Source Countries as defined in the Guidelines.

5. Interested eligible bidders may obtain further information from the Office of The Addl. Project Director, State Project Management Unit, Integrated Coastal Zone Management Project, Gujarat Ecology Commission, Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat and inspect the Bidding Documents at the address given above from 10.00AM to 5.00 PM on any working day during the period of sale of bid documents.
6. A complete set of bidding documents may be purchased from the Office of The Addl. Project Director, State Project Management Unit, Integrated Coastal Zone Management Project, Gujarat Ecology Commission, Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat from 21.08.2017 to 20.09.2017 (11:00 AM to 5:00PM) for a non-refundable fee as indicated, in the form of cash or Demand Draft on any Scheduled Bank, payable at Gandhinagar in favour of Additional Project Director, State Project Management Unit, Integrated Coastal Zone Management, Gujarat Ecology Commission. Interested bidders may obtain further information at the same address. Bidding documents requested by mail will be dispatched by registered/speed post on payment of an extra amount of Rs.1,500. The Addl. Project Director will not be held responsible for the postal delay if any, in the delivery of the documents or non-receipt of the same.

The Schedules of Requirements for all the Packages are contained in a single bidding document. Bidders need not purchase more than one bid document even if they want to bid for more than one Package.

7. The notice and the bid document for the Goods can also be seen with option to download from the Project website www.geciczmp.com. The downloaded bid document can be submitted along with non refundable fee of Rs. 5,000/- (Rupees Five Thousand) only towards the cost of the bid document. The Addl. Project Director, State Project Management Unit, Integrated Coastal Zone Management Project, Gujarat Ecology Commission, Gandhinagar will not accept the same if any portion of the downloaded document differs from the approved bid document available in the above mentioned Office. The download facility will be available from Dt. 21.08.2017 to 20.09.2017 up to 1700 Hrs. The Bidder should regularly access the same website for clarifications, amendments and pre-bid meeting minutes, if any, issued in respect of this tender:

(a) Price of bidding document (non-refundable) : Rs. 5,000.00
(b) Postal charges, Island : Rs. 1,500.00
(c) Postal charges, overseas : Rs. 3000.00
(d) Date of commencement of sale of bidding document : 21.08.2017
(e) Last date for sale of Bidding document : 20.09.2017
(f) Last date and time for receipt of bids : up to 21.09.2017 (12:00 PM)
(g) Date and Time of Opening of bids : at 21.09.2017 (12.30 PM)
(h) Place of opening of bids
State Project Management Unit, 
Integrated Coastal Zone Management Project 
Gujarat Ecology Commission, 
Block No. 18, 1st Floor, Udhyog Bhavan 
Sector 11, Gandhinagar-382011, Gujarat 
Phone: 079 23257656, 079 23257658, 079 23257659 
Fax: 079 23257657

(i) Address for Communication
Addl. Project Director 
State Project Management Unit, 
Integrated Coastal Zone 
State Project Management Unit 
Integrated Coastal Zone Management Project 
Gujarat Ecology Commission 
Block No. 18, 1st Floor, Udhyog Bhavan, 
Sector 11, 
Gandhinagar-382011, Gujarat 
Phone: 079 23257656, 079 23257658, 079 23257659, 
Fax: 079 23257657
E-mail: mail@geciczmp.com

All bids must be accompanied by a bid security as specified in the bid document and must be delivered to the above Office at the date and time indicated above. The Bid Security should be valid for at least 45 days beyond the bid validity period i.e. at least up to 03.01.2018. Electronic bidding is not permitted. Late bids will be rejected.

8. Pre-Bid meeting will be held on 04.09.2017 at 12.00 Hrs. in the Office of The Addl. Project Director, State Project Management Unit, Integrated Coastal Zone Management Project, Gujarat Ecology Commission, Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat to clarify the issues and to answer questions on any matter that may be raised at that stage.

9. Bids will be opened in the presence of Bidders' representatives, who choose to attend on the specified date and time.

10. In the event of the dates specified for bid receipt and opening being declared as closed holidays for Purchaser’s Office, the due dates for submission of bids and opening of bids will be the following working days at the appointed times.
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1. **PART 1 – BIDDING PROCEDURES**
SECTION I - INSTRUCTIONS TO BIDDERS [ITB]
# Section I. Instructions to Bidders

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Section I. Instructions to Bidders

A. General

1. Scope of Bid
   1.1 The Purchaser indicated in the Bidding Data Sheet (BDS), issues these Bidding Documents for the supply of Goods and Related Services incidental thereto as specified in Section VI, Schedule of Requirements. The name and identification number of this National Competitive Bidding (NCB) procurement are specified in the BDS. The name, identification, and number of lots of are provided in the BDS.

   1.2 Throughout these Bidding Documents:

      (a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, telex) with proof of receipt;

      (b) if the context so requires, “singular” means “plural” and vice versa; and

      (c) “day” means calendar day.

2. Source of Funds
   2.1 The Government of India (hereinafter called “Borrower”) specified in the BDS has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract for which these Bidding Documents are issued.

   2.2 Payments by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the financing agreement between the Borrower and the Bank (hereinafter called the Loan Agreement), and will be subject in all respects to the terms and conditions of that Loan Agreement. The Loan Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan Agreement or have any claim to the funds.

3. Fraud and Corruption
   3.1 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), as well as bidders, suppliers, and contractors and their agents (whether declared or not), personnel,
subcontractors, sub-consultants, service providers and suppliers under Bank-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts.\(^1\)

In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party\(^2\);

(ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation\(^3\);

(iii) “collusive practice” is an arrangement between two or more parties\(^4\) designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party\(^5\);

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a

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\(^1\)In this context, any action taken by a bidder, supplier, contractor, or any of its personnel, agents, subcontractors, sub-consultants, service providers, suppliers and/or their employees to influence the procurement process or contract execution for undue advantage is improper.

\(^2\)“Another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

\(^3\)“Party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

\(^4\)“Parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non-competitive levels.

\(^5\)“Party” refers to a participant in the procurement process or contract execution.
Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under sub-clause 3.1(e) below.

(b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;

(c) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive, or coercive practices during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur; and

(d) will sanction a firm or an individual, at any time, in accordance with prevailing Bank’s sanctions procedures, including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated subcontractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm

A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: (i) temporary suspension in connection with an ongoing sanctions proceeding; (ii) cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks; and (iii) the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption.

A nominated subcontractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which either has been: (i) included by the bidder
being awarded a Bank-financed contract.

3.2 In further pursuance of this policy, Bidders shall permit the Bank to inspect any accounts and records and other documents relating to the Bid submission and contract performance, and to have them audited by auditors appointed by the Bank.

3.3 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 35.1 (a) (iii) of the General Conditions of Contract.

4. Eligible Bidders

4.1 A Bidder, and all parties constituting the Bidder, may have the nationality of any country, subject to the restrictions specified in Section V, Eligible Countries. A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including Related Services.

4.2 A Bidder shall not have a conflict of interest. All bidders found to have conflict of interest shall be disqualified. Bidders may be considered to have a conflict of interest with one or more parties in this bidding process, if they:

(a) are or have been associated in the past, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under these Bidding Documents; or

(b) submit more than one bid in this bidding process, except for alternative offers permitted under ITB Clause 13. However, this does not limit the participation of subcontractors in more than one bid;

4.3-4.4 A firm that has been sanctioned by the Bank in accordance with the above ITB Clause 3.1 (d), or in accordance with the Bank’s Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, shall be ineligible to be awarded a Bank-financed contract, or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms is available at the electronic address specified in

in its pre-qualification application or bid because it brings specific and critical experience and know-how that are accounted for in the evaluation of the bidder’s pre-qualification application or the bid; or (ii) appointed by the Borrower.
the BDS.

4.5 Government-owned enterprises in the Borrower’s Country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Purchaser.

4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

5. Eligible Goods and Related Services

5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank may have their origin in any country in accordance with Section V, Eligible Countries.

5.2 For purposes of this Clause, the term “goods” includes commodities, raw material, machinery, equipment, and industrial plants; and “related services” includes services such as insurance, installation, training, and Comprehensive Maintenance.

5.3 The term “origin” means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

B. Contents of Bidding Documents

6. Sections of Bidding Documents

6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addendum issued in accordance with ITB Clause 8.

PART 1 Bidding Procedures

- Section I. Instructions to Bidders (ITB)
- Section II. Bidding Data Sheet (BDS)
- Section III. Evaluation and Qualification Criteria
- Section IV. Bidding Forms
- Section V. Eligible Countries
PART 2  Supply Requirements

- Section VI. Schedule of Requirements

PART 3  Contract

- Section VII. General Conditions of Contract (GCC)
- Section VIII. Special Conditions of Contract (SCC)
- Section IX. Contract Forms

6.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Documents.

6.3 The Purchaser is not responsible for the completeness of the Bidding Documents and their addendum, if they were not obtained directly from the Purchaser.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents. Failure to furnish all information or documentation required by the Bidding Documents may result in the rejection of the bid.

7. Clarification of Bidding Documents

7.1 A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser’s address specified in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than fifteen (15) days prior to the deadline for submission of bids. The Purchaser shall forward copies of its response to all those who have acquired the Bidding Documents directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under ITB Clause 8 and ITB Sub-Clause 24.2.

8. Amendment of Bidding Documents

8.1 At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addendum.

8.2 Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents directly from the Purchaser.

8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB Sub-Clause 24.2
C. Preparation of Bids

9. Cost of Bidding

9.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10. Language of Bid

10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into English language, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents Comprising the Bid

11.1 The Bid shall comprise the following:

(a) Bid Submission Form and the applicable Price Schedules, in accordance with ITB Clauses 12, 14, and 15;
(b) Bid Security, in accordance with ITB Clause 21, if required;
(c) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 22;
(d) documentary evidence in accordance with ITB Clause 16 establishing the Bidder’s eligibility to bid;
(e) documentary evidence in accordance with ITB Clause 17, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
(f) documentary evidence in accordance with ITB Clauses 18 and 30, that the Goods and Related Services conform to the Bidding Documents;
(g) documentary evidence in accordance with ITB Clause 19 establishing the Bidder’s qualifications to perform the contract if its bid is accepted; and
(h) Manufacturers’ authorization form.
(i) any other document required in the BDS.

12. Bid Submission Form and Price Schedules

12.1 The Bidder shall submit the Bid Submission Form using the form furnished in Section IV, Bidding Forms. This form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

13.1 Unless otherwise specified in the BDS, alternative bids shall not be considered.

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Bid Submission Form and in the Price Schedules shall conform to the requirements
specified below.

14.2 All lots and items must be listed and priced separately in the Price Schedules.

14.3 The price to be quoted in the Bid Submission Form shall be the total price of the bid, excluding any discounts offered.

14.4 The Bidder shall quote any unconditional discounts and indicate the method for their application in the Bid Submission Form.

14.5 The terms EXW and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by The International Chamber of Commerce, as specified in the BDS.

14.6 Prices shall be quoted as specified in the Price Schedule included in Section IV, Bidding Forms. The dis-aggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser. This shall not in any way limit the Purchaser’s right to contract on any of the terms offered. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V Eligible Countries. Prices shall be entered in the following manner:

(a) For Goods:

(i) the price of the Goods quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all duties (customs, excise etc.) and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;

(ii) any vat, sales tax and other taxes which will be payable on the Goods if the contract is awarded to the Bidder; and

(iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified in the BDS.

(c) For the Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:

(i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

(d) bidders may like to ascertain availability of excise duty exemption benefits, available for contracts financed under World Bank Credits/Loans. They are solely responsible for
obtaining such benefits, which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Purchaser will not compensate the bidder.

Where the bidder has quoted taking into account such benefits, he must give all information required for issue of necessary Certificates in terms of the Central Excise Notification -108/95 along with his bid in form at S. No. 8 of Section VI. Where the Purchaser issues such Certificates, Excise Duty will not be reimbursed separately.

14.7 Prices quoted by the Bidder shall be fixed during the Bidder’s performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A Bid submitted with an adjustable price quotation shall be treated as non responsive and shall be rejected, pursuant to ITB Clause 30. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

14.8 If so indicated in ITB Sub-Clause 1.1, bids are being invited for individual contracts (lots) or for any combination of contracts (packages). Prices quoted shall correspond to 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer any price reduction (discount) for the award of more than one Contract shall specify the applicable price reduction in accordance with ITB Sub-Clause 14.4 provided the bids for all lots are submitted and opened at the same time.

15. Currencies of Bid

15.1 The Bidder shall quote in Indian Rupees only.

16. Documents Establishing the Eligibility of the Bidder

16.1 To establish their eligibility in accordance with ITB Clause 4, Bidders shall complete the Bid Submission Form, included in Section IV, Bidding Forms.

17. Documents Establishing the Eligibility of the Goods and Related Services

17.1 To establish the eligibility of the Goods and Related Services in accordance with ITB Clause 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.

18. Documents Establishing the Conformity of the Goods and Related

18.1 To establish the conformity of the Goods and Related Services to the Bidding Documents, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VI, Schedule of Requirements.
18.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Schedule of Requirements.

18.3 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified in the BDS following commencement of the use of the goods by the Purchaser.

18.4 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser’s satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Schedule of Requirements.

19. Documents Establishing the Qualifications of the Bidder

19.1 The documentary evidence of the Bidder’s qualifications to perform the contract if its bid is accepted shall establish to the Purchaser’s satisfaction:

(a) (i) that, if required in the BDS, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer’s Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser’s Country;

(ii) Supplies for any particular item in each schedule of the bid should be from one manufacturer only. Bids from agents offering supplies from different manufacturer’s for the same item of the schedule in the bid will be treated as non-responsive.

(b) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

(c) Bids from Joint Ventures are not acceptable

20. Period of Validity of Bids

20.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser
as non responsive.

20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB Clause 21, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its bid, except as provided in ITB Sub-Clause 20.3.

20.3 In the case of fixed price contracts, if the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be adjusted as by the factor \[\text{value of factor stated in BDS}\] for each week or part of week that has elapsed from the expiration of the initial bid validity to the date of notification of award to the successful bidder. Bid evaluation shall be based on the Bid Price without taking into consideration the above correction.

21. Bid Security

21.1 The Bidder shall furnish as part of its bid, a Bid Security, if required, as specified in the BDS.

21.2 The Bid Security shall be in the amount specified in the BDS and denominated in the currency of the Purchaser’s Country or a freely convertible currency, and shall:

(a) at the bidder’s option, be in the form of either a certified check, demand draft, letter of credit, or a bank guarantee from a Nationalized/Scheduled Bank in India.

(b) be substantially in accordance with one of the forms of Bid Security included in Section IV, Bidding Forms, or other form approved by the Purchaser prior to bid submission;

(c) be payable promptly upon written demand by the Purchaser in case the conditions listed in ITB Clause 21.5 are invoked;

(d) be submitted in its original form; copies will not be accepted;

(e) remain valid for a period of 45 days beyond the validity period of the bids, as extended, if applicable, in accordance with ITB Clause 20.2;

21.3 If a Bid Security is required in accordance with ITB Sub-Clause
21.1, any bid not accompanied by a substantially responsive Bid Security in accordance with ITB Sub-Clause 21.1, shall be rejected by the Purchaser as non-responsive.

21.4 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder’s furnishing of the Performance Security pursuant to ITB Clause 44.

21.5 The Bid Security may be forfeited or the Bid Securing Declaration executed:

(a) If a Bidder:

(i) withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Form, except as provided in ITB Sub-Clause 20.2; or

(ii) does not accept the correction of errors in procurement of ITB 31,

or,

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB Clause 43;

(ii) furnish a Performance Security in accordance with ITB Clause 44.

21.6 Not used

21.7 If a bid security is not required in the BDS, and

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid Form, except as provided in ITB 20.2, or

(b) if the successful Bidder fails to: sign the Contract in accordance with ITB 43; or furnish a performance security in accordance with ITB 44;

the Borrower may, if provided for in the BDS, declare the Bidder disqualified to be awarded a contract by the Purchaser for a period of time as stated in the BDS.

22. Format and Signing of Bid

22.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB Clause 11 and clearly mark it “ORIGINAL.” In addition, the Bidder shall submit copies of the bid, in the number specified in the BDS and clearly mark them “COPY.” In the event of any discrepancy between the
original and the copies, the original shall prevail.

22.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. The authorization shall be indicated by written Power of Attorney accompanying the bid.

22.3 Any interlineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

**D. Submission and Opening of Bids**

23. Submission, Sealing and Marking of Bids

23.1 Bidders may always submit their bids by mail or by hand. When so specified in the BDS, bidders shall have the option of submitting their bids electronically.

(a) Bidders submitting bids by mail or by hand, shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB Clause 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB sub-Clauses 23.2 and 23.3.

(b) Bidders submitting bids electronically shall follow the electronic bid submission procedures specified in the BDS.

23.2 The inner and outer envelopes shall:

(a) Bear the name and address of the Bidder;

(b) be addressed to the Purchaser in accordance with ITB Sub-Clause 24.1;

(c) bear the specific identification of this bidding process indicated in ITB 1.1 and any additional identification marks as specified in the BDS; and

(d) bear a warning not to open before the time and date for bid opening, in accordance with ITB Sub-Clause 27.1.

23.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.

23.4 Telex, Cable or Facsimile bids will be rejected as non-responsive.

24. Deadline for Submission of Bids

24.1 Bids must be received by the Purchaser at the address and no later than the date and time specified in the BDS. In the event of the specified date for the submission of Bids being declared a
holiday for the Purchaser, the Bids will be received up to the appointed time on the next working day.

24.2 The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with ITB Clause 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

25. Late Bids

25.1 The Purchaser shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB Clause 24. Any bid received by the Purchaser after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

26. Withdrawal, Substitution, and Modification of Bids

26.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice in accordance with ITB Clause 23, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB Sub-Clause 22.2, (except that no copies of the withdrawal notice are required). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:

(a) submitted in accordance with ITB Clauses 22 and 23 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” or “MODIFICATION;” and

(b) received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB Clause 24.

26.2 Bids requested to be withdrawn in accordance with ITB Sub-Clause 26.1 shall be returned unopened to the Bidders.

26.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Submission Form or any extension thereof.

27. Bid Opening

27.1 The Purchaser shall conduct the bid opening in public at the address, date and time specified in the BDS. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB Sub-Clause 23.1, shall be as specified in the BDS. In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids will be opened at the appointed time and location on the next working day.
First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. If the withdrawal envelope does not contain a copy of the “power of attorney” confirming the signature as a person duly authorized to sign on behalf of the Bidder, the corresponding bid will not be opened. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked “SUBSTITUTION” shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked “MODIFICATION” shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only envelopes that are opened and read out at Bid opening shall be considered further.

All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the Bid Prices, including any discounts and alternative offers; the presence of a Bid Security, if required; and any other details as the Purchaser may consider appropriate. Only discounts and alternative offers read out at Bid opening shall be considered for evaluation. No Bid shall be rejected at Bid opening except for late bids, in accordance with ITB Sub-Clause 25.1.

The Purchaser shall prepare a record of the Bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot if applicable, including any discounts, and alternative offers if they were permitted; and the presence or absence of a Bid Security, if one was required. The Bidders’ representatives who are present shall be requested to sign the attendance sheet. A copy of the record shall be distributed to all Bidders who submitted bids in time, and posted online when electronic bidding is permitted.

E. Evaluation and Comparison of Bids

Information relating to the examination, evaluation, comparison, and postqualification of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until publication of the
Contract Award.

28.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and postqualification of the bids or contract award decisions may result in the rejection of its Bid.

28.3 Notwithstanding ITB Sub-Clause 28.2, from the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.

29. Clarification of Bids

29.1 To assist in the examination, evaluation, comparison and postqualification of the bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that changes the substance of the Bidder price of the bid shall not be considered. The Purchaser’s request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the bids, in accordance with ITB Clause 31.

30. Responsiveness of Bids

30.1 The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself.

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

(a) affects in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or

(b) limits in any substantial way, inconsistent with the Bidding Documents, the Purchaser’s rights or the Bidder’s obligations under the Contract; or

(c) if rectified would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

30.3 Bids from Agents, without proper authorization from the manufacturer as per Section XII, shall be treated as non-responsive.

30.4 If a bid is not substantially responsive to the Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material
deviation, reservation, or omission.

### 31. Nonconformities, Errors, and Omissions

#### 31.1 Provided that a Bid is substantially responsive, the Purchaser may waive any non-conformities or omissions in the Bid that do not constitute a material deviation.

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

#### 31.3 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

#### 31.4 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be rejected and the Bid security may be forfeited

### 32. Preliminary Examination of Bids

#### 32.1 The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in ITB Clause 11 have been provided, and to determine the completeness of each document submitted.

#### 32.2 The Purchaser shall confirm that the following documents and information have been provided in the Bid. If any of these documents or information is missing, the offer shall be rejected
and the bid security may be forfeited.

(a) Bid Submission Form, in accordance with ITB Sub-Clause 12.1;

(b) Price Schedules, in accordance with ITB Sub-Clause 12.2;

(c) Bid Security in accordance with ITB Clause 21, if applicable.

33. Examination of Terms and Conditions; Technical Evaluation

33.1 The Purchaser shall examine the bid to confirm that the Bidder has accepted all terms and conditions specified in GCC and the SCC without material deviations or reservation. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security (GCC Clause 18), Warranty (GCC Clause 28), Force Majeure (Clause 32), Limitation of liability (GCC Clause 30), Governing law (GCC Clause 9) and Taxes & Duties (GCC Clause 17) will be deemed to be a material deviation. The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

33.2 The Purchaser shall evaluate the technical aspects of the Bid submitted in accordance with ITB Clause 18, to confirm that all requirements specified in Section VI, Schedule of Requirements of the Bidding Documents have been met without any material deviation or reservation.

33.3 If, after the examination of the terms and conditions and the technical evaluation, the Purchaser determines that the Bid is not substantially responsive in accordance with ITB Clause 30, it shall reject the Bid.

34. Conversion to Single Currency

Not used

35. Domestic Preference

Not used

36. Evaluation of Bids

36.1 The Purchaser shall evaluate each bid that has been determined, up to this stage of the evaluation, to be substantially responsive.

36.2 To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined in ITB Clause 36. No other criteria or methodology shall be permitted.

36.3 To evaluate a Bid, the Purchaser shall consider the following:

(a) evaluation will be done for Items or Lots, as specified in the BDS; and the Bid Price as quoted in accordance with clause 14;
(b) price adjustment for correction of arithmetic errors in accordance with ITB Sub-Clause 31.3;

(c) price adjustment due to discounts offered in accordance with ITB Sub-Clause 14.4;

(d) adjustments due to the application of the evaluation criteria specified in the BDS from amongst those set out in Section III, Evaluation and Qualification Criteria;

36.4 The Purchaser’s evaluation of a bid will exclude and not take into account:

(a) In the case of Goods manufactured in India or goods of foreign origin already located in India, vat, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;

(b) any allowance for price adjustment during the period of execution of the contract, if provided in the bid.

36.5 The Purchaser’s evaluation of a bid may require the consideration of other factors, in addition to the Bid Price quoted in accordance with ITB Clause 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of bids, unless otherwise specified in Section III, Evaluation and Qualification Criteria. The factors, methodologies and criteria to be used shall be as specified in ITB 36.3 (d).

36.6 If so specified in the BDS, these Bidding Documents shall allow Bidders to quote separate prices for one or more lots, and shall allow the Purchaser to award one or multiple lots to more than one Bidder. The methodology of evaluation to determine the lowest-evaluated lot combinations, is specified in Section III, Evaluation and Qualification Criteria.

37. Comparison of Bids

37.1 The Purchaser shall compare all substantially responsive bids to determine the lowest-evaluated bid, in accordance with ITB Clause 36.

38. Postqualification of the

38.1 The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated
Bidder and substantially responsive bid is qualified to perform the Contract satisfactorily.

38.2 The determination shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB Clause 19.

38.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder’s capabilities to perform satisfactorily.

39. Purchaser’s Right to Accept Any Bid, and to Reject Any or All Bids

39.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders.

F. Award of Contract

40. Award Criteria

40.1 The Purchaser shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

41. Purchaser’s Right to Vary Quantities at Time of Award

41.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VI, Schedule of Requirements, provided this does not exceed the percentages specified in the BDS, and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.

42. Notification of Award

42.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted.

42.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.

Publication of Award

42.3 The Purchaser shall publish in a National website[ GOI web site- http://tenders.gov.in] the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated;
Recourse to unsuccessful Bidders

(iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful bidders may request in writing to the Purchaser for a debriefing seeking explanations on the grounds on which their bids were not selected. The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests a debriefing.

42.4 Upon the successful Bidder’s furnishing of the performance security and signing the Contract Form pursuant to ITB Clause 44, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to ITB Clause 21.4.

43. Signing of Contract

43.1 Promptly after notification, the Purchaser shall send the successful Bidder the Agreement and the Special Conditions of Contract.

43.2 Within twenty-one (21) days of receipt of the Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

44. Performance Security

44.1 Within twenty one (21) days of the receipt of notification of award from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section IX Contract forms, or another Form acceptable to the Purchaser. The Purchaser shall promptly notify the name of the winning Bidder to each unsuccessful Bidder and discharge the Bid Securities of the unsuccessful bidders pursuant to ITB Sub-Clause 21.4.

44.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.
SECTION II - BIDDING DATA SHEET

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

<table>
<thead>
<tr>
<th>ITB Clause Reference</th>
<th>A. General</th>
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<tbody>
<tr>
<td>ITB 1.1</td>
<td>The Purchaser is:</td>
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<td>Addl. Project Director</td>
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<td></td>
<td>State Project Management Unit</td>
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<td>Integrated Coastal Zone Management Project</td>
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<td>DirectoGujarat Ecology Commission</td>
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<td>Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat</td>
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</table>

ITB 1.1 The number, identification and names of Packages comprising this NCB are:

Supplying & Installation and commissioning of Solar Renewable Energy Applications.

BID REFERENCE: IFB No. SPMU/GEC/NCB/02/2017-18

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 3 kW Capacity</td>
<td>No</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>b. 5 kW Capacity</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>Set</td>
<td>11</td>
</tr>
</tbody>
</table>

ITB 2.1 The Borrower is Government of India

ITB 2.1 The name of the Project is: INTEGRATED COASTAL ZONE MANAGEMENT PROJECT

ITB 4.3 A list of firms debarred from participating in World Bank projects is available at [http://www.worldbank.org/debarr](http://www.worldbank.org/debarr)

B. Contents of Bidding Documents
| ITB 7.1 | For **Clarification of bid purposes** only, the Purchaser’s address is:  
Addl. Project Director  
State Project Management Unit  
Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan,  
Sector 11, Gandhinagar-382011, Gujarat  
Email : mail@geciczmp.com  
Web: [www.geciczmp.com](http://www.geciczmp.com) |
| ITB 7.2 | **Add the following sub-para:**  
Pre-Bid meeting will be held at the following address and Date & Time at which prospective bidders may request clarification of the project requirements and the criteria for qualification –  
**Date:** 04.09.2017 at 12.00 Hrs.  
**Place:**  
State Project Management Unit  
Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan,  
Sector 11, Gandhinagar-382011, Gujarat |
| C. Preparation of Bids |  
**ITB 11.1 (h)** The Bidder shall submit the following additional documents in its bid:  
(i) Technical Brochures along with Data Sheets to verify technical compliance.  
**ITB 11.1(i)** The Bidder shall submit the following additional documents in its bid  
1. The bidder should furnish the information of at least past 5 supplies for each of the items quoted by the bidder. Or similar equipment and their satisfactory performance received from respective client.  
2. All bids submitted shall also include the following information along with formats as under -  
   (i) Copies of original documents defining the constitution or legal status, place of registration and principal place of business of the company or firm or partnership, etc.  
   (ii) The bidder should clearly confirm that all the facilities exist in his factory for inspection and testing and these will be made available to the Purchaser or
his representative for inspection.

(iii) Details of Service Centers and information on service support facilities that would be provided during/after the warranty period [in the Service Support Form given in Section IV].

(iv) Reports on financial standing of the Bidder such as Profit and Loss Statements, Balance Sheets and Auditor’s Reports for the past three (3) Financial Years i.e. **2014-15, 2015-16, and 2016-17.**

| ITB 13.1 | Alternative Bids shall not be considered. |
| ITB 14.6 (a) (iii) | “Final destination (Project Site)”: Various villages of Gujarat in three different districts. Details are given in Section – VI: Supply Requirements. |
| ITB 14.7 | “The prices quoted by the Bidder shall be fixed and not adjustable.” |
| ITB 18.3 | Period of time the Goods are expected to be functioning (for the purpose of spare parts): 10 years |
| ITB 19.1 (a) | Manufacturer’s Authorization is: Required. |
| ITB 20.1 | The bid validity period shall be **90 days** after the bid submission deadline date.: |
| ITB 20.3 | The factor will be 8% per annum. |
| ITB 21.1 | Bid shall include a Bid Security (issued by Bank) included in Section IV Bidding Forms. |
| ITB 21.2 | The amount of the Bid Security shall be: |

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Bid Security (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 3 kW Capacity</td>
<td>No</td>
<td>71</td>
<td>3,92,500.00</td>
</tr>
<tr>
<td></td>
<td>b. 5 kW Capacity</td>
<td>No</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>Set</td>
<td>11</td>
<td>2,20,000.00</td>
</tr>
</tbody>
</table>
The Bid Security shall be in Indian Rupee only.

**ITB 22.1**
In addition to the original of the bid, the number of copies is: Two

**D. Submission and Opening of Bids**

**ITB 23.1**
Bidders shall not have the option of submitting their bids electronically.

**ITB 23.1 (b)**
Deleted

**ITB 23.2 (c)**
The inner and outer envelopes for each Package quoted, shall bear the following additional identification marks:

**Supplying & Installation and commissioning of Solar Renewable Energy Applications**

IFB No. SPMU/GEC/NCB/02/2017-18

**ITB 24.1**
For bid submission purposes, the address is:

State Project Management Unit  
Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat

The deadline for the submission of bids is:

**Date:** up to 21.09.2017  
**Time:** 12.00 Hrs.

**ITB 27.1**
The bid opening shall take place at:

State Project Management Unit  
Integrated Coastal Zone Management Project  
Gujarat Ecology Commission  
Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat

**Date:** 21.09.2017  
**Time:** 12.30 Hrs.

**E. Evaluation and Comparison of Bids**

**ITB33.1**
Deviations from or objections or reservations to critical provisions, which will be treated as material deviations are:

- Bid Security [ITB Clause 21];
- Performance Security [GCC Clause 18];
- Governing Law [GCC Clause 9];
- Deemed Export [Note under 14.6 (a) of ITB Bidding Data Sheet];
- Taxes and Duties [GCC/SCC Clause 17];
- Warranty [GCC/SCC Clause 28];
- Force Majeure [GCC Clause 32]; and
- Limitation of Liability [GCC Clause 30].

**ITB 36.3(a)**

Evaluation will be done for each Package. There are 2 (Two) Packages in this IFB.

Bidder should quote for the complete requirement for goods and services specified in a Package as stated in ITB clause 14.8, failing which, such bids will be treated as non-responsive.

**ITB 36.3**

“The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria

a) Deviation in Delivery schedule: No.
No credit will be given to deliveries before the earliest date, and bids offering delivery after the final date shall be treated as non-responsive.

b) Deviation in payment schedule: No.

c) the availability in India of spare parts and after-sales services for the equipment offered in the bid. An adjustment equal to the cost to the Purchaser of establishing the minimum service facilities and parts inventories, if quoted separately, shall be added to the bid price, for evaluation purposes only.

d) Deleted.

**ITB 36.6**

In this IFB, there are 2 (Two) Packages.

**Bidders shall be allowed to quote separate prices for one or more Packages.**

In case of Purchaser at its discretion, decides to award more than one lot to a bidder, it will be based on evaluation of the bidders capability to execute more than one lot simultaneous.

**F. Award of Contract**

**ITB 41.1**

The maximum percentage by which quantities may be increased is: **20%**

The maximum percentage by which quantities may be decreased is: **20%**

Quantity increase should be rounded off to the nearest digit.
SECTION III. EVALUATION AND QUALIFICATION CRITERIA

This Section complements the Instructions to Bidders. It contains the criteria that the Purchaser may use to evaluate a bid and determine whether a Bidder has the required qualifications. No other criteria shall be used.

Contents

1. Evaluation Criteria (ITB 36.3)
2. Multiple Contracts (ITB 36.6)
3. Post-Qualification Requirements (ITB 38.2)
1. **Evaluation Criteria (ITB36.3)**

The Purchaser's evaluation of a bid may take into account, in addition to the Bid Price quoted in accordance with ITB Clause 14.6, one or more of the following factors as specified in ITB Sub-Clause 36.3 and in BDS referring to ITB 36.3, using the following criteria and methodologies.

(a) **Delivery schedule** (as per Incoterms specified in the BDS)

The Goods specified in the List of Goods are required to be delivered within the acceptable time range (after the earliest and before the final date, both dates inclusive) specified in Section VI, Delivery Schedule. No credit will be given to deliveries before the earliest date, and bids offering delivery after the final date shall be treated as non-responsive. Within this acceptable period there will not be any adjustment.

(b) **Deviation in payment schedule.**

Not Applicable.

(c) **Availability in India of spare parts and after sales services for equipment offered in the bid.**

An adjustment equal to the cost to the Purchaser of establishing the minimum service facilities and parts inventories, as outlined in BDS Sub-Clause 36.3(c), if quoted separately, shall be added to the bid price, for evaluation purposes only.

(d) **Comprehensive Maintenance Costs** – N/A

(e) **Performance and productivity of the equipment** – *Not Applicable*

(f) **Specific additional criteria** – *TECHNICAL*

The bidder should have experience of having successfully completed contracts for:

a. Engineering, Procurement, Construction, Installation, Testing, Commissioning and

b. Operation and Maintenance of Solar photovoltaic pumps during the last five years with at least 10 Units of solar photovoltaic pump.

The Bidders should have valid test certificates as per required specifications for supply under tender and submit the copy of test reports.

Details of similar work done in last five years along with copies of the work orders and satisfactory certificates from the user agencies should be submitted along with the Technical Offer as per *Error! Reference source not found.* of the tender Document.

The Bidder should have sufficient technically qualified and well-experienced manpower for installation of 11 nos of 10 HP irrigation pumping system at different locations in Gujarat. Brief
bio-data of the key personnel should be enclosed with the offers as per Error! Reference source not found. of the tender Document.

2. Multiple Contracts (ITB 36.6)

The Purchaser shall award multiple contracts to the Bidder that offers the lowest evaluated combination of bids (one contract per Package) and meets the post-qualification criteria (this Section III, Sub-Section ITB 38.2 Post-Qualification Requirements)

The Purchaser shall:

(a) Evaluate only Packages or contracts that include at least the percentages of items per Package and quantity per item as specified in ITB Sub Clause 14.8

(b) Take into account:

(i) The lowest-evaluated bid for each Package and

(ii) The price reduction per Package and the methodology for its application as offered by the Bidder in its bid.

3. Post-qualification Requirements (ITB 38.2)

After determining the lowest-evaluated bid in accordance with ITB Sub-Clause 37.1, the Purchaser shall carry out the post-qualification of the Bidder in accordance with ITB Clause 38, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder’s qualifications.

a) Financial Capability: The Minimum required average annual turnover in respect of successful bidder in the last three (3) Financial Years i.e., 2014-15, 2015-16 and 2016-17 shall be of values as indicated below in INR or an equivalent amount in a freely convertible currency -

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Name of Package</th>
<th>Minimum Required Annual Turnover (Rs. in Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 3 kW Capacity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. 5 kW Capacity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td></td>
</tr>
</tbody>
</table>
N.B.: To qualify for more than one Package, for which bids are invited in the IFB, the bidder must have the minimum required average annual turnover sufficient to meet the aggregate of financial capability as the qualification for those Packages.

b) **Experience and Technical Capacity:**

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement (s):

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Renewable Energy Systems</th>
<th>Technical Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Grid Connected Rooftop Solar PV Power System</strong></td>
<td>1. The bidder as a manufacture or supplier must have manufactured / supplied, Operated and Maintained of Solar photovoltaic plants with at least Engineering, Procurement, Construction, Installation, Testing, Commissioning experience of cumulative 200 kW of solar photovoltaic plant with at least plant of minimum size 3 kW, which are under successful operation for at least one year as on date of bid opening for this package.</td>
</tr>
<tr>
<td>1</td>
<td>a. 3 kW Capacity</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Grid Connected Rooftop Solar PV Power System</strong></td>
<td>2. Bidder must be MNRE channel partner for roof top Solar PV power systems.</td>
</tr>
<tr>
<td>1</td>
<td>b. 5 kW Capacity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Grid Connected 10 HP Solar PV Irrigation Pumping System</strong></td>
<td>1. The bidder as a manufacture or supplier must have manufactured / supplied, Operated and Maintained Solar photovoltaic pumps with at least 10 Units of solar photovoltaic pump which are under successful operation for at least one year as on date of bid opening for this package.</td>
</tr>
</tbody>
</table>

The equipments for supply must be of the most recent series models incorporating the latest improvements in design. The models should have been released on or after January 2015 and up to 100% of the quantity put to bid as mentioned in Schedule of Requirements should be in satisfactory operation for 12 Months as on date of bid opening. Further, bidder should be in continuous business of
manufacturing products similar to that specified in the schedule of requirements during the last three years prior to bid opening.

The list of supplied & installed equipments shall include:

- Names and addresses of Purchasers with contact details as e-mail addresses/ Phone Nos.
- Contract Nos. and Dates.
- Equipments/items ordered/supplied & installed with their respective quantities.
- Scheduled completion date and actual completion date.
- Details of Complaint, if any, received from the purchaser about the performance of the Equipments/ items.

c) The bidder shall furnish the information on all past supplies and satisfactory performance for (b) above in the Performa under Section VI-Form Sr. No. 7.

d) All bids submitted shall also include the following information along with specified formats:

(i) Copies of original documents defining the constitution or legal status, place of registration and principal place of business of the company or firm or partnership, etc.

(ii) A brief write-up, backed with adequate data, explaining his available capacity and experience (both technical and commercial) for the manufacture and supply of the required systems and equipments within the specified time of completion after meeting all their current commitments.

(iii) Details of Service Centers and information on service support facilities that would be provided after the warranty period.

(iv) Reports on financial standing of the Bidder such as Profit and Loss Statements, Balance Sheets and Auditor’s Reports for the past three (3) Financial Years i.e. 2014-15 to 2015-16 and 2016-17.
Section IV – Bidding Forms

Table of Forms

1. Bidder Information Form .................................................................................. 434
2. Bid Submission Form ...................................................................................... 445
3. Price Schedule .................................................................................................. 48
4. Price and Completion Schedule - Related Services ........................................... 482
5. Bid Security (Bank Guarantee) ........................................................................ 513
6. Manufacturer’s Authorization .......................................................................... 524
# Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

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

NCB No.: [insert number of bidding process]

---

1. **Bidder’s Legal Name** [insert Bidder’s legal name]

2. **Bidder’s actual or intended Country of Registration:** [insert actual or intended Country of Registration]

3. **Bidder’s Year of Registration:** [insert Bidder’s year of registration]

4. **Bidder’s Legal Address in Country of Registration:** [insert Bidder’s legal address in country of registration]

5. **Bidder’s Authorized Representative Information**
   - **Name:** [insert Authorized Representative’s name]
   - **Address:** [insert Authorized Representative’s Address]
   - **Telephone/Fax numbers:** [insert Authorized Representative’s telephone/fax numbers]
   - **Email Address:** [insert Authorized Representative’s email address]

6. Attached are copies of original documents of: [check the box(es) of the attached original documents]
   - [ ] Articles of Incorporation or Registration of firm named in 1, above, in accordance with ITB Sub-Clauses 4.1 and 4.2.
   - [ ] In case of government owned entity from the Purchaser’s country, documents establishing legal and financial autonomy and compliance with commercial law and not dependent agency of borrower or sub-borrower or purchaser, in accordance with ITB Sub-Clause 4.5.
**Bid 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.*

- **Date:** [insert date (as day, month and year) of Bid Submission]
- **NCB No.:** [insert number of bidding process]
- **Invitation for Bid No.:** [Insert No of IFB]
- **Alternative No.:** [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Purchaser]

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda No.: [insert the number and issuing date of each Addenda];

(b) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services [insert a brief description of the Goods and Related Services];

(c) The total price of our Bid, excluding any discounts offered in item (d) below, is: [insert the total bid price in words and figures, indicating the various amounts and the respective currencies];

(d) The discounts offered and the methodology for their application are:

**Discounts.** If our bid is accepted, the following discounts shall apply. [Specify in detail each discount offered and the specific item of the Schedule of Requirements to which it applies.]

**Methodology of Application of the Discounts.** The discounts shall be applied using the following method: [Specify in detail the method that shall be used to apply the discounts];

(e) Our bid shall be valid for the period of time specified in ITB Sub-Clause 20.1, from the date fixed for the bid submission deadline in accordance with ITB Sub-Clause 24.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
(f) If our bid is accepted, we commit to obtain a performance security in accordance with ITB Clause 44 and GCC Clause 17 for the due performance of the Contract;

(g) We, including any subcontractors or suppliers for any part of the contract, have nationality from eligible countries

(h) We have no conflict of interest in accordance with ITB Sub-Clause 4.3;

(i) Our firm, its affiliates or subsidiaries—including any subcontractors or suppliers for any part of the contract—has not been declared ineligible by the Bank, under the Purchaser’s country laws or official regulations, in accordance with ITB Sub-Clause 4.6;

(j) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]

<table>
<thead>
<tr>
<th>Name of Recipient</th>
<th>Address</th>
<th>Reason</th>
<th>Amount</th>
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</thead>
<tbody>
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</tbody>
</table>

(If none has been paid or is to be paid, indicate “none.”)

(k) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.

(l) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
(m) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

(n) We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely, “Prevention of Corruption Act 1988.”

Signed: [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name: [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on ____________ day of _________________, ______ [insert date of signing]
Price Schedule Forms

[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of Packages in column 1 of the Price Schedules shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]
### PRICE SCHEDULE

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Description of Goods</th>
<th>Delivery Date</th>
<th>Quantity and physical unit</th>
<th>Unit price EXW [including excise duty if any] (Col. 4×5)</th>
<th>Total EXW price per line item [including Excise Duty if any] (Col. 4×5)</th>
<th>Price per line item for inland transportation, insurance and other services required to convey the Goods to their final destination. Including supplying Installation Commissioning including Three (03) years comprehensive Warranty incl. spare parts (free of cost) to the purchaser.</th>
<th>Sales, vat, GST and other taxes payable per item if Contract is awarded (in accordance with ITB 14.6(a)(ii))</th>
<th>Total Price per line item (Col. 6+7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert number of the item]</td>
<td>[insert name of Good]</td>
<td>[insert quoted Delivery Date]</td>
<td>[insert number of units to be supplied and name of the physical unit]</td>
<td>[insert EXW unit price]</td>
<td>[insert total EXW price per line item]</td>
<td>[insert the corresponding price per line item]</td>
<td>[insert sales tax GST and other taxes payable per line item if Contract is awarded]</td>
<td>[insert total price per item]</td>
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<td>-------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td>71 Nos</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td>1 No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td>a. 3 kW Capacity</td>
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<td>b. 5 kW Capacity</td>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>11 Sets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Grand Total (Col. 8 + Col. 9)</td>
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</tbody>
</table>
The Bidder should quote rates inclusive of transportation to the location of site, installation on site, commissioning including three years comprehensive warranty which includes required spare parts during warranty period.

Name of Bidder []
Signature of Bidder []
Date []

Note: (a) The bidder shall give list of spares for 5 years operation (or as required for the period specified in the evaluation criteria) separately indicating description, quantity, unit price and total price in the above format, for those items, whose scope of supply includes spare parts as per technical specification.
BID SECURITY (BANK GUARANTEE)

[The Bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[insert Bank’s Name, and Address of Issuing Branch or Office]

Beneficiary: [insert name and address of Purchaser]

Date: [insert date]

BID GUARANTEE No.: [insert bid Guarantee number]

We have been informed that [insert name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated [insert date] (hereinafter called "the Bid") for the execution of [insert name of Contract].

Furthermore, we understand that, according to your conditions, bids must be supported by a Bid Guarantee.

At the request of the Bidder, we [insert name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount in figures expressed in the currency of the Purchaser’s Country or the equivalent amount in an international freely convertible currency], [insert amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Bid Submission Form; or

(b) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity as stated in the Bid Submission Form or extended by the Purchaser at any time prior to expiration of this period, (i) fails or refuses to execute the Contract, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB, and (iii) does not accept the correction of Bid price pursuant to ITB Clause 31.

This Guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder that the Bidder was unsuccessful; or (ii) forty-five days after the expiration of the Bidder’s Bid.

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15 (a) is hereby excluded.

[Signature(s) of authorized bank’s representative(s)]
MANUFACTURER’S AUTHORIZATION

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are legally binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]

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

NCB No.: [insert number of bidding process]

Alternative No.: [insert identification No., if this is a Bid for an alternative]

To: [insert complete name of Purchaser]

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer’s factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract against the above IFB.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm against this IFB.

No company or firm or individual other than M/s. ________________ are authorized to bid, and conclude the contract for the above goods manufactured by us against this specific IFB.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]
Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Bidder]

Dated on __________ day of __________________, _______ [insert date of signing]

Note – Modify this format suitably in cases where manufacturer’s warranty and guarantee are not applicable for the items for which bids are invited. If the supply consists of number of items, indicate the specific item (s) for which alone the above authorization is required.
SECTION V. – DELETED
PART 2 - SUPPLY REQUIREMENTS
Section VI. Schedule of Requirements

Contents

1. LIST OF GOODS AND DELIVERY SCHEDULE ......................................................ERROR! BOOKMARK NOT DEFINED.
2. LIST OF RELATED SERVICES AND COMPLETION SCHEDULE ..........................62
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6. PROFORMA OF CERTIFICATE FOR ISSUE BY THE PURCHASER AFTER SUCCESSFUL INSTALLATION AND FUNCTIONING OF THE SUPPLIED GOODS .........................................................................................................................92
7. PROFORMA FOR PERFORMANCE STATEMENT ..................................................95
8. DECLARATION REGARDING DEEMED EXPORT BENEFITS ........................................97
1. List of Goods and Delivery Schedule

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Description of Goods</th>
<th>Quantity</th>
<th>Physical unit</th>
<th>Final Destination as specified in BDS</th>
<th>Delivery (as per Incoterms) Date</th>
<th>Latest Delivery Date</th>
<th>Bidder’s offered Delivery date</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert item No]</td>
<td>[insert description of Goods]</td>
<td>[insert quantity of item to be supplied]</td>
<td>[insert physical unit for the quantity]</td>
<td>[insert place of Delivery]</td>
<td>[insert the number of days following the date of effectiveness of the Contract]</td>
<td>[insert the number of days following the date of effectiveness of the Contract]</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td>No</td>
<td>71</td>
<td>Please refer Technical Specifications-3.4: Project Site - List of Villages</td>
<td>60 Days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 3 kW Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td>No</td>
<td>01</td>
<td></td>
<td>60 Days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. 5 kW Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>Set</td>
<td>11</td>
<td></td>
<td>60 Days</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The Bidder should furnish a detailed operations and maintenance manual for each appropriate unit of the supplied goods and equipments.

2. The Supplier is responsible for Performance of on-site assembly and start-up of the supplied instrument units.

3. The Supplier is responsible for all unpacking, assemblies, wiring, installations, cabling between instrument units, connecting it to the computer (wherever applicable) and connecting to power supplies. The Supplier will test all operations of the instruments,
measurements and data production, storage & output and accomplish all adjustments necessary for successful and continuous operation of the instrument at all installation sites.

4. The equipment price shall cover all costs including installation, tests, trials and commissioning at Final (Project Site) Destinations as specified in BDS(Section II/ITB 14.6 (a) (iii)). Three Years Comprehensive warranty including replacement of parts Cost and Training to the Representatives from respective Villages for each of the Line Items in the List of Goods and Delivery Schedule as in the Table above. Three years warranty shall be given to each location site holder as directed by GEC.

5. Training:

   The Supplier shall develop detailed operation manual and training material (including sufficient no. of printed booklets, CDs, etc.) in local language. The same shall be first submitted to Purchaser for review and approval. Once the document is approved, Contractor shall provide hands-on training in one batch per system to at least 5 nos. of Technical Staff of GEC and 5 nos. of Representatives from respective village/ CBO/location officeRepresentative, where Contractor has supplied the system. Contractor shall provide training on-site or shall organize at centralized location and shall bear all expenditure towards their transport, stay, food and any other expenditure for the said training.

   The training is to be imparted as follows –

   a) Package 1: Grid Connected Rooftop Solar PV Power System - 1 Days
   b) Package 2: Grid Connected 10 HP Solar PV Irrigation Pumping System. – 1 Days

   The Purchaser or his Authorized Representative/ Consultant reserves right to inspect the quality and content of the training program and Supplier or shall be obliged to make necessary changes in the quality of the material being delivered or the trainer.
3. Technical Specifications

The Bidder has to prepare a comparison sheet as below –

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Name of the Item</th>
<th>Required Specifications as per the Bid Document</th>
<th>Bidder's Offered Specifications</th>
<th>Remarks/ Deviations, if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package 1:</td>
<td>Package 1: Grid Connected Rooftop Solar PV Power System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package 2:</td>
<td>Package 2: Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. The list of Supplying & Installation and commissioning of Solar Renewable Energy Applications is as given in table below:

<table>
<thead>
<tr>
<th>No.</th>
<th>Renewable Energy Systems</th>
<th>Quantity</th>
<th>List of Villages</th>
</tr>
</thead>
</table>
| 9.1 | Grid Connected Rooftop Solar PV Power System  
     a. 3 kW Capacity | 71 Nos   | As per list given below |
| 9.2 | Grid Connected Rooftop Solar PV Power System  
     b. 5 kW Capacity | 1 No     | As per list given below |
| 9.3 | Grid Connected 10 HP Solar PV Irrigation Pumping System | 11 Sets | As per list given below |

**Location Of Sites**

(A) Roof Top

(i) GEC Kutch: 52 villages of 3 kW capacity

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Village Name</th>
<th>Taluka</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rampar</td>
<td>Anjar</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Khari Rohar</td>
<td>Gandhidham</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Sangad</td>
<td>Anjar</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Vira</td>
<td>Anjar</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Tuna</td>
<td>Anjar</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Vandi</td>
<td>Anjar</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Chudva</td>
<td>Gandhidham</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Sadau</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Baroi</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Bharapar</td>
<td>Gandhidham</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Dhrub</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Village</td>
<td>Taluka</td>
<td>No</td>
</tr>
<tr>
<td>---</td>
<td>---------------</td>
<td>------------</td>
<td>-----</td>
</tr>
<tr>
<td>12</td>
<td>Bhadreswar</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Kukdsar</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Nvinal</td>
<td>Mundra</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Chopadva</td>
<td>Bhachau</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Vadhiya</td>
<td>Bhachau</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Jangi</td>
<td>Bhachau</td>
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<tr>
<td>18</td>
<td>Bodki</td>
<td>Maliya</td>
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</tr>
<tr>
<td>19</td>
<td>Jajasar</td>
<td>Maliya</td>
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</tr>
<tr>
<td>20</td>
<td>Chadvada</td>
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<tr>
<td>21</td>
<td>Surajbari</td>
<td>Bhachau</td>
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<tr>
<td>22</td>
<td>Shikarpur</td>
<td>Bhachau</td>
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<tr>
<td>23</td>
<td>Aabaliya</td>
<td>Bhachau</td>
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</tr>
<tr>
<td>24</td>
<td>NaniChirai</td>
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</tr>
<tr>
<td>25</td>
<td>Akrimoti</td>
<td>Abdasa</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>Charopdi Moti</td>
<td>Abdasa</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>Bera</td>
<td>Abdasa</td>
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</tr>
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<td>28</td>
<td>Rapargadh</td>
<td>Abdasa</td>
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</tr>
<tr>
<td>29</td>
<td>Bambhdai</td>
<td>Mandvi</td>
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</tr>
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<td>30</td>
<td>Bhada</td>
<td>Mandvi</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>Ber Moti</td>
<td>Abdasa</td>
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<tr>
<td>32</td>
<td>Aashiravandh</td>
<td>Abdasa</td>
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<td>33</td>
<td>Andharvandh</td>
<td>Lakhpat</td>
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</tr>
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<td>34</td>
<td>Gunau</td>
<td>Lakhpat</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>Bhangodi</td>
<td>Lakhpat</td>
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<tr>
<td>36</td>
<td>Khirsara</td>
<td>Lakhpat</td>
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</tr>
<tr>
<td>37</td>
<td>Valavarivandh</td>
<td>Abdasa</td>
<td>1</td>
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<td>38</td>
<td>Dhuvai</td>
<td>Abdasa</td>
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<tr>
<td>41</td>
<td>BhaduVandh</td>
<td>Abdasa</td>
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<td>Sr. No</td>
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</tr>
<tr>
<td>--------</td>
<td>------------------------</td>
<td>----</td>
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</tr>
<tr>
<td>1</td>
<td>CCF MNP Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jamnagar Range Office</td>
<td>1</td>
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</tr>
<tr>
<td>3</td>
<td>Cher Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sikka Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Jodiya Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Kambhaliya Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bhatia Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Dwarka Range Office</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Forest Rest Home Dwarka</td>
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</tr>
<tr>
<td>10</td>
<td>Bhadu Camp</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Narara Camp</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sr. No</td>
<td>Village Name</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Fodder Godom</td>
<td>1</td>
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<tr>
<td>13</td>
<td>Cyclon Relief</td>
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(iii) CCF Kutch - 3 KW capacity

<table>
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<th>Sr. No</th>
<th>Village Name</th>
<th>No</th>
</tr>
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<tr>
<td>1</td>
<td>Bhachau RFO</td>
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<tr>
<td>2</td>
<td>Galpadar Rest Home</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Matano Madh Rest House</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Narayan Sarovar Eco tourism centre</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Bhanada Ghorad Sanchetna kendra</td>
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</tr>
<tr>
<td>6</td>
<td>Bhachau Check Post Quarter</td>
<td>1</td>
</tr>
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</table>

(IV) CCF Kutch - 5 KW

<table>
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<tr>
<th>Sr. No</th>
<th>Village Name</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mandvi Rest House (Mandvi)</td>
<td>1</td>
</tr>
</tbody>
</table>

(B) Solar Pump - 10 HP Capacity

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Village Name</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dholavira Nursery Center</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Tagadi Folder Plot</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Bhachau Rajbai Nursery</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Kanthkot Folder Plot</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Rudrani Nursery</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Lodai Quarter</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Saiyedpar Nursery</td>
<td>1</td>
</tr>
</tbody>
</table>
3.1. DETAILS SPECIFICATIONS FOR PACKAGE - 1: GRID-CONNECTED ROOF- TOP SOLAR PV POWER SYSTEM

The Grid Connect Solar Power Generating System consists of mainly three components viz. (1) solar photovoltaic (SPV) array, (2) module mounting structure and (3) power conditioning unit (PCU)/inverter. The SPV array converts the solar energy into DC electrical energy. The module mounting structure holds the modules in required position and the DC electrical energy is converted to AC power by the power conditioning unit (PCU), which is connected to the power grid. The AC power output of the inverter is fed to the AC distribution board through metering panel and isolation panel. The 230 V AC output- single phase of the system can be utilized or as an option it could be stepped up to the required voltage level and after synchronizing with the grid, can be exported to the grid.

Figure 1 Block Diagram for Solar Rooftop PV System
GENERAL SCOPE OF WORK

3.1.0. The scope of work involves Engineering, Procurement and Construction (EPC) of the 2 kW grid-connected solar photovoltaic roof top system, on lumpsum and turnkey basis, at 20 no. of Gujarat Ecology Commission (GEC) identified institutions (e.g. Range office/Rest House/ camp site/ Fodder Godown /Cyclone Relief Centre/Ecotourism centre/panchayats, anganvadi, PHC / CHC etc.) in different hamlets / villages of Kutch and Jamnagar districts in coastal zones of Gujarat under ICZMP project of GEC – Gandhinagar.

3.1.1. **Civil work:** Civil work includes design, supply and installation of module mounting structure; civil footings/foundations of non-penetrating type with appropriate anchoring / chemical adhesives with base plate for solar structure mounting; at fixed tilt angle of 15° facing due south. Appropriate foundations/structures for mounting inverter(s), junction box(s), cabins, LA etc. as per site requirement.

3.1.2. **Electrical work:** Electrical work includes design, supply and installation of all electrical equipment(s) including but not limited to solar PV modules, junction box(s), inverter(s), earthing, LA, disconnects, cables, protection device(s) etc. along with other non-electrical items as well.

3.1.3. The scope of work involves commissioning of the 3 & 5 kW solar photovoltaic rooftop system including 5 years of comprehensive operation and maintenance (including replacement of non-working, poorly performing or worn out parts) with minimum of 74.5% annual performance ratio and minimum guaranteed generation as elaborated in Section 3.2.

3.1.4. **Permissions and Approvals:** Bidders shall be responsible for receiving all necessary permissions and approvals from GEDA/CEIG/GUVNL/GETCO/GERMI or any other agency required for the purpose of receiving approvals / permissions. GEC shall provide necessary documents to receive approvals in the name of GEC / beneficiary as per requirement. GEC shall provide necessary permissions / approvals for site execution work.

3.1.5. **Bill of Materials (Tentative)**
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item Detail</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Solar PV system capacity</td>
<td>≥3 kW and 5 kW</td>
</tr>
<tr>
<td>2.</td>
<td>PV module structure (Al.)</td>
<td>One complete Set. With fixed tilt (10°)</td>
</tr>
<tr>
<td>3.</td>
<td>Junction box</td>
<td>As required</td>
</tr>
<tr>
<td>4.</td>
<td>Grid connected PCU with remote monitoring system</td>
<td>1 no. of 2 kVA / 5 kVA as applicable</td>
</tr>
<tr>
<td>5.</td>
<td>Bi-Directional meter (As per GoG requirement)</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Solar grade DC cables</td>
<td>As required</td>
</tr>
<tr>
<td>7.</td>
<td>Solar grade AC cables</td>
<td>Meter</td>
</tr>
<tr>
<td>8.</td>
<td>ELCB</td>
<td>As required</td>
</tr>
<tr>
<td>9.</td>
<td>SPD</td>
<td>As required</td>
</tr>
<tr>
<td>10.</td>
<td>Earthing system (chemical earthing)</td>
<td>2 separate sets of earthing systems</td>
</tr>
<tr>
<td>11.</td>
<td>Lightening protection system</td>
<td>Set</td>
</tr>
<tr>
<td>12.</td>
<td>GI pipes for DC / AC cables with necessary accessories</td>
<td>sufficient so as to connect solar PV system with main grid through net-meter</td>
</tr>
<tr>
<td>13.</td>
<td>Civil foundations</td>
<td>Non-penetrating with chemical adhesive</td>
</tr>
<tr>
<td>14.</td>
<td>Physical protection of system</td>
<td>Suitably designed cabin with GI roofing at top and door with lock and key arrangements. GI grills in sides to allow ventilation</td>
</tr>
<tr>
<td>15.</td>
<td>Weather sensors</td>
<td>1 solar sensor for GHI, 2 temp. sensors (air and module back), one wind speed sensor</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>16.</td>
<td>Web – box and on-line monitoring</td>
<td>Either built in or separate system with online web-monitoring and report</td>
</tr>
<tr>
<td>17.</td>
<td>Cable connectors, nuts and bolts and metal accessories</td>
<td>Accessories made with SS in appropriate quantity for system + equal quantity as “spares” to be provided</td>
</tr>
<tr>
<td>18.</td>
<td>Cable dressing</td>
<td>To be done through cable pins made of SS for hanging cables with structure, GI pipes for carrying DC or AC cables,</td>
</tr>
<tr>
<td>19.</td>
<td>Transformer</td>
<td>Bidders need to assess the requirement as per local power condition and supply the same if required.</td>
</tr>
<tr>
<td>20.</td>
<td>Display Board</td>
<td>1 no. of display board 50 mm x 500 mm x 5 mm thick Al frame duly painted with weather proof paint; 2 mm GI sheet duly painted with weather proof metal color, displaying contents provided by GEC and GERMI. The frame structure needs to be supported with 75 mm Galvanized Iron legs of 50 mm X 50 mm x 5 mm angle duly painted and supported with appropriate RCC footings.</td>
</tr>
<tr>
<td>21.</td>
<td>Bi-Directional Meter (Net-Meter)</td>
<td>1 no. of bi-directional meter (tested and certified by GETCO)</td>
</tr>
</tbody>
</table>

### 3.1.6. PV MODULE (S)
• The PV module Bidder should have latest edition of IEC 61215 and IEC 61730-2 qualification certification for PV modules. Copy to be provided with tender.

• The PV modules should be made in India, as per MNRE requirements.

• The PV module to be used for the project shall have minimum 300 Wp of rated capacity. Higher capacity modules are encouraged.

• The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC61215/IS14286. In addition, the modules must conform to IEC61730-1 requirements for construction & IEC 61730-2 requirements for testing, for safety qualification or equivalent IS.

• For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.

• The PV modules shall contains poly crystalline silicon solar cells.

• PV modules containing minimum 72 no. of solar cells with minimum 300 W (DC) output each or above output should be used. Module capacity less than minimum 300 watts should not be accepted. Photo/electrical conversion efficiency of SPV module shall be greater than 15.0%.

• Low voltage drop bypass diodes shall be provided. PV modules must be tested and approved by one of the IEC authorized test centers. The terminal box should be preferably be TUV approved.

• The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.

• The maximum tolerance in the rated power of solar PV module shall have maximum tolerance of +3%.

• The bidder shall carefully design & accommodate requisite numbers of the
modules to achieve the rated power. I-V curves at STC should be provided by bidder.

- It shall perform satisfactorily in relative humidity up to 100% with temperatures between -10 °C and +85 °C and with stand gust up to 200km/h from back side of the panel.

- The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of bypass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

- A strip containing the following details should be laminated inside the module so as to be clearly visible from the front side.
  - Name of the Supplier or distinctive Logo
  - Model or Type No.
  - Serial No.
  - Year of make.

3.1.7. IDENTIFICATION AND TRACEABILITY

3.1.7.1. Each PV module must use a RF identification tag (RFID), which must contain the following information:

- Name of the manufacturer of PV Module
- Name of the Manufacturer of Solar cells
- Month and year of the manufacture (separately for solar cells and module)
- Country of origin (separately for solar cells and module)
- I-V curve for the module
- Peak Wattage, \( I_m \), \( V_m \) and FF for the module
- Unique Serial No and Model No of the module
- Date and year of obtaining IEC PV module qualification certificate
• Name of the test lab issuing IEC certificate
• Other relevant information on traceability of solar cells and module as per ISO 9000 series.
• The RFID can be inside the module laminate, but must be able to withstand harsh environmental conditions.

3.1.8. MODULE MOUNTING STRUCTURE

3.1.8.1. Metallic frame structure of anodized aluminum shall be used for mounting of SPV module on the roof of the building. Each structure should have tilt angle 10° - 15°.

3.1.8.2. The grouting of the frame structure should be done by M15 (PCC1:2:4 specification), or PCC blocks of non-penetrating type may be used so as to avoid water leaking on the terrace, which should withstand the wind speed of 150 km/hr. All structures should be earthed.

3.1.8.3. It may be ensured that the design has been certified by a recognized Lab/Institution in this regard. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

3.1.8.4. The mounting structure aluminum shall be as per latest IS 2062/IS 4759 or equivalent IEC or IS standards, material thickness should be minimum 2.5 mm.

3.1.8.5. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Necessary protection towards rusting need to be provided either by coating or anodization.

3.1.8.6. The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array
structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels.

3.1.8.7. Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.

3.1.8.8. The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m$^2$.

3.1.8.9. The minimum clearance of the structure from the roof level should be 300 mm

EARTHING AND SURGE PROTECTIONS

3.1.9. SURGE PROTECTION DEVICE (SPD)

3.1.9.1. Internal surge protection shall consist of MOV type arrestors connected from +ve and –ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition.

3.1.9.2. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC in-built bypass fuse (parallel) which should get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards.

3.1.9.3. Nominal discharge current ($I_n$) at 8/20 micro seconds shall be minimum 10 kA with maximum discharge ($I_{max}$) at 8/20 micro seconds minimum 20 kA with visual indication (through mechanical flag) in modules to monitor the life of SPD.

3.1.10. EARTHING FOR PV ARRAY
3.1.10.1. The photovoltaic modules, BOS and other components of power plant requires adequate earthing for protecting against any serious faults as guided by IEC 60364.

3.1.10.2. The system shall be totally maintenance free and require no periodic or scheduled maintenance for a period of at least 30 years.

3.1.10.3. The chemical earthing for array and LT power system shall be made with 8-10 inch diameter with suitable electrode rode including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement using Ground Enhancement Material/ backfill compound composition as required as per provisions of IEC 62561/ IS: 3043.

3.1.10.4. Only GI strip of 20 mm width to be used as conductor for LA system.

3.1.10.5. There shall be no requirement to add water or any other chemical any time after initial installation.

3.1.10.6. The design of the electrode should have more than 5kA current carrying capacity for 1 second and Electrode dimensions 40 mm diameter & 2000 mm length. The primary conductor should be 25 mm diameter. All conductors should be copper materials.

3.1.10.7. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.

3.1.10.8. Each string/ array and MMS of the plant shall be grounded properly. The array structures are to be connected to earth pits as per IS standards. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.

3.1.10.9. The complete earthing system shall be mechanically & electrically connected to provide independent return to earth.
3.1.10.10. For each earth pit, a necessary test point shall be provided.

3.1.10.11. In compliance to Rule 11 and 61 of Indian Electricity Rules, 1956 (as amended up to date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.

3.1.10.12. The Bidder shall submit the detailed specifications of the array earthing.

3.1.11. LIGHTNING PROTECTION FOR PV ARRAY

3.1.11.1. The source of over voltage can be lightning or other atmospheric disturbance. Main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components as per IEC 60099/IEC 62561.

3.1.11.2. Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to shadow on PV array, maximum wind speed and maintenance requirement at site in future.

3.1.11.3. The lightning conductor shall be earthed through flats and connected to the earth mats as per applicable Indian Standards with earth pits. Each lightning conductor shall be fitted with individual earth pit as per required Standards including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS.

3.1.11.4. Separate chemical earth to be provided for grounding the LA system.

3.1.11.5. Only GI strip of 20 mm width to be used as conductor for LA system.

3.1.11.6. The Bidder shall submit the drawings and detailed specifications of the PV array lightning protection equipment.
3.1.12. JUNCTION BOX (JB)

3.1.12.1. The junction boxes (JB) are to be provided in the PV array for termination of connecting cables. The JB Boxes (JBs) shall be made of GRP/FRP/Powder Coated aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement.

3.1.12.2. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.

3.1.12.3. Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 with EPDM rubber gasket to prevent water entry, Single /double compression cable glands and provision of earthing. It should be placed at 5 feet height or above for ease of accessibility.

3.1.12.4. Each Junction Box shall have High quality Suitable capacity of SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

3.1.12.5. Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.

3.1.12.6. Y-connector should be used for the connection of the module to inverters.

3.1.13. POWER CONDITIONING UNIT

3.1.13.1. The details of the grid-connected inverter (Power Conditioning Unit – PCU) are as given below:
<table>
<thead>
<tr>
<th><strong>Purpose</strong></th>
<th>The power conditioner unit shall convert DC produced by SPV array and adjust the voltage &amp; frequency levels to suit the Grid. The minimum capacity of PCU should be 3 kW / 5 kW - single phase as applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grid supervision</strong></td>
<td>Single phase shall be supervised with respect to rise / fall in programmable threshold values of frequency &amp; the power section of the plant. The plant shall get disconnected / connected from the grid in case of a grid fault / after normal grid conditions have resumed.</td>
</tr>
</tbody>
</table>
| **Output voltage on AC side** | 230 (+10% or -15%) V AC.  
A dedicated isolation transformer housed in the PCU enclosure shall be supplied to match the PCU output voltage to the utility grid voltage. PCU/ Solar Inverter voltage range should be reconfigured as per site requirements. |
| **Output voltage** | 230(+10%/-15%) V ,50 Hz AC |
| **Output Frequency** | 50 (+3 Hz) Hz |
| **DC system voltage** | The electrical safety of the array installation is of the utmost importance. Array electrical configuration shall be in such a way that, the MPPT shall operate with maximum efficiency, between the low and high temperature of the site.  
Max. input Voltage: 600 V  
MPPT Voltage range: 200 – 480 V |
| **Maximal Current** | 5% PP |
### ripple

<table>
<thead>
<tr>
<th>Power Factor</th>
<th>0.95 Inductive – 0.95 captive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient room temperature</td>
<td>-20˚ to 55 °C</td>
</tr>
</tbody>
</table>

#### Housing Cabinet
- a. PCU is housed in suitable switch cabinet, with min IP 21 degree of Ingress Protection.
- b. Weatherproof, rodents & insect proof
- c. Components and circuit boards mounted inside the enclosures clearly identified with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.
- d. All doors, covers, panels and cable exists shall be gasketed or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks. All openings shall be provided with grills or screens with openings no larger than 0.95 cm (about 3x8 inch).

#### Other Important Features

**Electrical safety Protections**

- a. General
  - The PCU shall include appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of PCU component failure or from parameters beyond the PCU’s safe operating range due to internal or external causes. The self-protective features shall
not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the PCU, including commutation failure, shall be cleared by the PCU protective devices and not by the existing site utility grid service circuit breaker.

| b. Over/under voltage | a. Mains (Grid) over-under voltage and frequency protection.  
b. Over voltage protection against atmospheric lightning  
c. Protection against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients. |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| c. Fool Proof Protection | Against ISLANDING  
| d. Accidental open circuit | Full protection against accidental open circuit and reverse polarity at the input. |
| e. Internal Faults | Inbuilt protection for internal faults including excess temperature, commutation failure, overload and cooling fan failure is obligatory. |
| f. Galvanic Isolation | a. Galvanic Isolation is provided to avoid any DC component being injected into the grid and the potential for AC components appearing at the array.  
b. Galvanic Isolation shall be provided between the inverter/PCU and grid to avoid any DC component being injected into the grid and the potential for AC components appearing at the array. |
c. Further, it is also observed at various locations throughout the distribution grid that the grid voltage would consistently be greater or less than the acceptable voltage window of many inverters and PCUs. Moreover, this variation may be only for particular days of a week, seasonal, or for a limited time.

d. In such a case, the Contractor shall study/measure the point of interconnection of the PV system consistently for at least one week to identify the voltage range experienced at the interconnection point of the distribution grid. If the grid voltage continuously fluctuating then it needs to be provide isolation transformer.

e. Consequently, the Contractor shall adjust the input/output of the isolation transformer to appropriate tap settings so that the voltage on the inverter side of the transformer is always within the acceptable voltage window of the inverter. The appropriate tap setting shall be conveyed to GEC by the contractor.

d. Earth Fault Supervision

| An integrated earth fault detection device is provided to detect eventual earth fault on DC side and shall send message to the supervisory system |

e. Disconnection & Islanding

| Disconnection of the PV generator in the event of loss of the main grid supply is achieved by in built protection within the power conditioner. This may be achieved through rate of change of current, unbalanced voltages, or reactive load variants. Operation outside the limits of power quality as described in |
technical data sheet shall cause the power conditioner to disconnect the grid. Additional parameters requiring automatic disconnection are:

- Neutral voltage displacement
- Over current
- Earth fault &
- Reverse power

In each of the above cases, tripping time shall be less than 0.5 seconds. Response time in case of grid failure due to switch off or failure based shutdown should be well within 60 seconds.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>f.</td>
<td>Automatic reconnection after the Grid failure is resorted.</td>
</tr>
<tr>
<td>g.</td>
<td>Array Ground fault</td>
</tr>
<tr>
<td>h.</td>
<td>Operator interface</td>
</tr>
<tr>
<td>i.</td>
<td>Fault conditions</td>
</tr>
<tr>
<td>j.</td>
<td>Parameter access</td>
</tr>
<tr>
<td>k.</td>
<td>DC isolation</td>
</tr>
<tr>
<td>l. Parallel operation with Grid</td>
<td>Provided &amp; capable of interrupting line-to-line fault currents and line to ground fault currents.</td>
</tr>
<tr>
<td>m. Unbalanced output load</td>
<td>PCU is able to withstand an unbalanced output load to the extent of 25%.</td>
</tr>
<tr>
<td>n. Shut down / Standby mode</td>
<td>Shut down / standby mode with its contact open under the following conditions before attempting an automatic restart after an appropriate time delay; in sufficient solar power output.</td>
</tr>
<tr>
<td>a. <strong>Insufficient solar power input:</strong> When the power available from the PV array is insufficient to supply the losses of the PCU, the PCU shall go to a standby/shutdown mode. The PCU control shall prevent excessive cycling during rightly shut down or extended periods of insufficient solar radiation.</td>
<td></td>
</tr>
<tr>
<td>b. <strong>Utility-Grid over or under voltage:</strong> The PCU shall restart after an over or under voltage shutdown when the utility grid voltage has returned to within limits for a minimum of two minutes.</td>
<td></td>
</tr>
<tr>
<td>c. <strong>Utility-Grid over or under frequency:</strong> The PCU shall restart after an over or under frequency shutdown when the utility grid voltage has returned to the within limits for minimum of two minutes.</td>
<td></td>
</tr>
<tr>
<td>o. Internal wiring</td>
<td>Standard Cu wiring, with flame resistant insulation.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| **p. Display on front panel & indicators** | a. instantaneous PCU ac power output and the DC voltage current and power input  
b. Accuracy of display: 3% of full scale factor or better  
c. Display visible from outside the PCU enclosure.  
d. Operational status of the PCU, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front cover of the PCU enclosure. |
| **q. Emergency OFF** | Emergency OFF button is located at an appropriate position on the unit. |
| **r. Grounding** | PCU includes ground lugs for equipment and PV array groundings. The DC circuit ground is a solid single point ground connection. |
| **s. Factory Testing** | a. Tested to demonstrate operation of its control system and the ability to be automatically synchronized and connected in parallel with a utility service, prior to its shipment.  
b. Operation of all controls, protective and instrumentation circuits demonstrated by direct test if feasible or by simulation operation conditions for all parameters that cannot be directly tested.  
c. Demonstration of utility service interface protection circuits and functions, including calibration and functional trip tests of faults and isolation protection equipment.  
d. Operation of startup, disconnect and shut down |
controls also to be tested and demonstrated, stable operation of the PCU and response to control signals shall also be tested and demonstrated.

e. Factory testing include measurement of phase current, efficiencies, harmonic content and power factor. All tests shall be performed 25, 50, 75 and 100% of the rated nominal power.

f. Factory test report (FTR): Should be supplied with the unit after all tests. The FTR shall include detailed description of all parameters tested qualified and warranted.

t. Operating Modes

<table>
<thead>
<tr>
<th>a. Night or sleep mode</th>
<th>where the Inverter is almost completely turned off, with just the timer and control system still in operation, losses &lt;0.2 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Standby mode</td>
<td>where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 10 W).</td>
</tr>
<tr>
<td>c. Operational of MPP tracking mode</td>
<td>the control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner shall automatically re-enter standby mode input power reduces below the standby mode threshold. Front panel display providing the status of the PCU, including AC power output &amp; DC current voltage and power input, and unit fault indication.</td>
</tr>
</tbody>
</table>

u. Codes & Standards

The quality of equipment supplied shall be controlled to meet the guidelines for engineering design included in the
standards and codes listed in the relevant ISI and other standards, such as:

a. IEEE 928: Recommended Criteria for terrestrial PV power systems.
b. IEEE 929 Recommended practice for utility interface of residential and intermediate PV systems.
d. IEC 61683
e. IEC 60068

<table>
<thead>
<tr>
<th>v. MPPT</th>
<th>Maximum power point tracker is integrated in the power conditioner unit to maximize energy drawn from the array. The MPPT shall be microprocessor based to minimize power losses. The MPPT shall have provision (manual setting) for constant voltage operation.</th>
</tr>
</thead>
</table>
| w. Data Logging System | a. All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and can be read on the digital front panel at any time the current values, previous values for up to a month and the average values.  
b. The following parameters shall be accessible via the operating interface display:
  - AC voltage  
  - AC output current  
  - Output power  
  - DC input voltage |
- DC input current
- Time active
- Time disabled
- Temperatures (C)
- Converter status

c. The data logging system for weather parameters (Solar radiation, ambient and module temperatures and wind speed) should be provided with the system.

d. Protective function limits (VIZ-AC over voltage, AC under voltage, Over frequency, under frequency, ground fault, PV starting voltage, PV stopping voltage, over voltage delay, under voltage delay over frequency, ground fault delay, PV starting delay, PV stopping delay.

<table>
<thead>
<tr>
<th>x. Remote Monitoring System</th>
<th>Remote monitoring system shall be included with each photovoltaic system. The monitoring system should transmit the following data in real-time to a central server and store it:</th>
</tr>
</thead>
</table>
|                           | a. DC currents, voltages and power.  
|                           | b. AC currents, voltages and power.  
|                           | c. Irradiation, ambient temperature, module temperature and wind speed.  
|                           | d. Error logs.  

This data may be transmitted either using the available LAN or GSM/ GPRS, or any other mode of connectivity available at the site.

The contractor shall be responsible for data connectivity for monitoring up to the warranty/ O&M period of the PV system, after which, the Contractor shall transfer all
ownership rights, SIM card, account information, instructions, Dongle etc. to GEC.

The contractor shall ensure that GEC is aware of the contracts required to maintain connectivity post-warranty/O&M period.

This data shall be accessible by GEC through a secure login account.

The stored data should be represented through hourly, daily, monthly, etc. graphs and easily downloadable in .csv or .xls format.

3.1.14. CABLES & ACCESSORIES

3.1.14.1. For Cables & Accessories following certificates are mandatory: (Copy of the certificate to be provided with tender.)

3.1.14.2. General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 and UV resistant for outdoor installation:

- IEC 60189
- IS 694/ IS 1554
- IS/IEC 69947

3.1.14.3. All the cables which shall be supplied shall be conforming to IS 1554 / 694 Part 1 of 1988 & shall be of 650 V/ 1.1 kV grade as per requirement. Only PVC copper cables shall be used.

3.1.14.4. The size of the cables between array interconnections, array to junction boxes, junction boxes to PCU etc. shall be so selected to keep the voltage drop and losses to the minimum.

3.1.14.5. Certification of cables should be submitted in the tender.
3.1.14.6. Proper laying of cables have to be ensured in appropriate GI/metal pipe as per site requirement. String Cables should be passes from Pipes and Cable-ties/saddles shall be used to hold and guide the Pipes (cables/wires) from the modules to inverters or junction boxes. It should be fixed at 1 m interval. The cable conduit pipe, cable tie/saddle must be anticorrosive.

3.1.15. HOUSING FOR ENCLOSURES: The required housing shall be constructed at as per site condition so as to ensure safety of equipments.

3.1.16. SHADOW ANALYSIS: The shadow analysis of the project site has to be carried out by Contractor and shall be submitted to GEC, after placement of work order.

3.1.17. SPARE PARTS: One set of essential spares for the PCU, nuts and bolts, cable clip, clamps etc. shall be provided and made available at the plant.

3.1.18. DISPLAY BOARD: A display board should be installed at site of min. size 4’ x 3’ on two poles. MS Sheet of board shall be of minimum 22 SWG. The text should include GEC address. The board should be spray painted, with vinyl letter pasting.

3.1.19. DOCUMENTATION: Two sets of installation manual / user manual shall be supplied. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals.

3.1.19.1. Detailed drawings with specifications of each component should be submitted with the Technical Bid.

3.1.20. METERING

3.1.20.1. Metering arrangements has to be made with the approval of concerned DISCOMs as per the following:

3.1.20.2. The Meter should be single phase, 2 wire Bidirectional Energy meter of 0.5 S Class of suitable capacity for measurement of import/Export of energy.
Testing of above components and liaison with DISCOM/ CEIG for necessary approvals is included in the scope of work of the Bidder.

3.1.21. OTHER FEATURES

3.1.21.1. The PV module(s) will be warranted for a minimum period of 10 years from the date of supply.

3.1.21.2. An Operation, Instruction and Maintenance Manual in English and the local language should be provided with the system. The following minimum details must be provided in the Manual:

- About Photovoltaics
- About solar PV system – its components and expected performance.
- About PV module
- Clear instructions about mounting of PV module(s)
- About electronics
- DO’s and DON’Ts
- Clear instructions on regular maintenance and troubleshooting of solar power plant

3.1.22. GUARANTEED PERFORMANCE

3.1.22.1. The Performance Ratio (PR) is a measure of the quality of a PV plant that is independent of location and insolation (power in solar radiation) and therefore often described as a quality factor. The PR is stated as percent and describes the relationship between the actual and theoretical energy outputs of the PV plant. It thus shows the proportion of the energy that is actually available for export to the grid after deduction of energy loss.

3.1.22.2. The procedure for performance monitoring is based on the standard IEC 61724 – PV system performance monitoring: Guidelines for measurement, data exchange and analysis.
3.122.3. Calibrated Solar sensor, two temperature sensors (ambient and module temperature) and anemometer shall be installed by the bidder at the location of the PV power plant for measurement of PR at the time of Commissioning of system.

3.122.4. The PR at the time of commissioning of the plant shall be measured in the form of POWER PR as the performance will be measured at the instant of commissioning.

3.122.5. The PR shall be calculated as the ratio of (a) Measured, actual power evacuated in the grid at the evacuation point at a particular instant and (b) calculated, Nominal Power Output of the plant at that instant. Wherein, the Nominal Power Output of the plant is calculated as the product of ‘in-plane’ solar insolation reading from the solar sensor (in kW/m²) and the net capacity of all the PV modules in (kW).

3.122.6. The daily average reference irradiation, daily average temperature and daily average energy generation for 3 kW SPV system are given in below table:

<table>
<thead>
<tr>
<th>Month</th>
<th>Global Horizontal Irradiance (kWh/m²)</th>
<th>Diffuse Horizontal Irradiance (kWh/m²)</th>
<th>Ambient Temperature (°C)</th>
<th>Average Energy Generation (kWh/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>4.03</td>
<td>1.67</td>
<td>18.8</td>
<td>11</td>
</tr>
<tr>
<td>February</td>
<td>4.89</td>
<td>1.89</td>
<td>22.0</td>
<td>13</td>
</tr>
<tr>
<td>March</td>
<td>5.86</td>
<td>1.82</td>
<td>26.8</td>
<td>14</td>
</tr>
<tr>
<td>Month</td>
<td>April</td>
<td>May</td>
<td>June</td>
<td>July</td>
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<td></td>
<td>6.30</td>
<td>6.82</td>
<td>5.68</td>
<td>3.94</td>
</tr>
<tr>
<td></td>
<td>2.23</td>
<td>2.48</td>
<td>3.42</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>31.1</td>
<td>33.4</td>
<td>32.1</td>
<td>29.6</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>14</td>
<td>12</td>
<td>9</td>
</tr>
</tbody>
</table>

### 3.1.22.7.
The annual generation from the 3 kW PV system for above radiation is 4400 kWh and PR is 74.5%.

### 3.1.22.8. **Performance Guarantee:**
The Performance Ratio of Grid Connected Systems shall be more than 74.5%. The minimum monthly guaranteed generation shall be greater than 3.5 units / kW on annual average basis.

### 3.1.22.9. **GENERAL CONDITIONS: APPLICABLE TO PACKAGE - 1**
<table>
<thead>
<tr>
<th>Component</th>
<th>Applicable IEC/equivalent BIS Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Standard Description</strong></td>
</tr>
<tr>
<td>Power Conditioners/Inverters</td>
<td>Efficiency Measurements</td>
</tr>
<tr>
<td></td>
<td>Environmental Testing</td>
</tr>
<tr>
<td>Cables</td>
<td>General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 VDo-, UV resistant for outdoor installation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Switches/Circuit Breakers/Connectors</td>
<td>General Requirements Connectors -safety</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Junction Boxes/Enclosures for inverter/ charge controller/ luminaries</td>
<td>General Requirements</td>
</tr>
</tbody>
</table>

* Must additionally conform to the relevant national/international Electrical Safety Standard.

All DC cables should be solar grade cables only and AC cables shall be UV resistant for solar application, concealed in galvanized/ UPVC cable trays with minimum 3 cm clearance from the terrace/ rooftop floor.
3.2. DETAILED SPECIFICATIONS FOR PACKAGE - 2: GRID-CONNECTED 10 HP SOLAR PV IRRIGATION PUMPING SYSTEM

SCOPE OF WORK

SYSTEM DESCRIPTION

A water pump basically is an electro-mechanical device that moves water by mechanical action and powered by an electricity generating source. Solar PV irrigation pump is a DC / AC water pump running on the electricity that is generated by solar photovoltaic modules for pumping of underground water from borewell. The Solar PV net-metered irrigation pump system consists of mainly five components viz. (1) Solar Photovoltaic (SPV) array with seasonal tracking (Latitude ± 15°) (2) DC/AC motor-pump set (3) VFD / inverter (4) manual change-over switch (5) and Bi-directional meter (net-meter).

Bidder must ensure following functionality and provide system accordingly.

a) Important function of the system is to supply power to the irrigation pump through solar PV modules and grid both when grid is available as net-metered system
b) To supply power to the irrigation pump through solar PV modules, when grid is not available but solar energy is available and
c) To inject surplus electricity (after catering local loads) from solar PV modules through grid-interactive inverter via bi-directional (net – meter).

d) Contractor will ensure isolation of solar PV system and pump circuit from the grid while grid is not available. This can be achieved via manual changer – over system. In such cases, for safety reasons, the solar PV system shall only get connected and cater to irrigation pump. Depending upon engineering design, a second inverter may be required for grid interaction along with suitable change over system.
e) Bidder may chose for AC / DC pumps and provide necessary system configuration like VFD / inverter etc.

3.2.1. GENERAL SCOPE OF WORK

The scope of work involves Engineering, Procurement and Construction (EPC) of the grid – connected and net – metered irrigation pump set of 10 HP capacity to be powered by 10 kW SPV system. The
contract is on lumpsum and turnkey basis. Total eleven (11) no. of systems at different locations identified by Gujarat Ecology Commission (GEC) are to be provided with these pump-sets. These locations are mainly in Jamnagar and Kutch district of Gujarat and in different hamlets / villages.

3.2.1. **Civil Work:** Civil works includes design, supply and installation of module mounting structure; civil footings / foundations with appropriate anchoring for solar PV module mounting structure with seasonal tilt adjustment, facing due south with module tilt angle of latitude ± 15° (seasonal angles). Appropriate foundations/structures for mounting electrical panels/controller/inverter(s), junction box(s), safety fencing etc. required for safety and satisfactory operation of the system (based on site requirement) shall be considered in the scope of work.

3.2.2. **Electrical Work:** Electrical works includes design, supply and installation of all electrical equipment(s) including but not limited to solar PV modules, junction box(s), motor-pump set controller / inverter(s), bi-directional meters, earthing, LA, change – over, disconnects, cables, safety and protection device(s) etc. along with other non-electrical items as well.

3.2.3. **Operation and Maintenance:** The scope of work involves commissioning of the 10 HP solar photovoltaic irrigation pumping system including three (3) years of comprehensive operation and maintenance (including free – of – cost replacement and installation of non-working, poorly performing or worn out parts) with minimum 70,000 LPD as elaborated in Section 3.2.19.

3.2.4. **Permissions and Approvals:** Bidders shall be responsible for receiving all necessary permissions and approvals from GEDA /CEIG / GUVNL / GETCO / GERMI or any other agency required for the purpose of receiving approvals / permissions. Being the first net-metered solar PV irrigation system, GEC shall facilitate project specific approvals (other than statutory permissions and approvals required from aforesaid agencies) if required. Contractor shall provide necessary documents to receive approvals which need to be taken in the name of GEC / beneficiary. GEC shall facilitate necessary permissions / approvals for site execution from respective beneficiaries.
3.2.5. **Following table provides minimum necessary technical requirements for the system.**

Bidder shall comply with these requirements and is abided to provide higher specifications, more quantity to ensure the required functionality of the system.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>List of Components (Indicative)</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Solar PV module</td>
<td>≥34 no. of 300Wp SPV modules</td>
</tr>
<tr>
<td>2.</td>
<td>PV module Structure (Al. / GI with &gt;75 micron coating)</td>
<td>One complete Set. With seasonal tilt adjustment and manual tracking three times in a year</td>
</tr>
<tr>
<td>3.</td>
<td>Junction Box</td>
<td>As required</td>
</tr>
<tr>
<td>4.</td>
<td>Controller/Inverter</td>
<td>1 no. of 10 kVA</td>
</tr>
<tr>
<td>5.</td>
<td>Flow meter</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Solar Grade DC Cables</td>
<td>As required</td>
</tr>
<tr>
<td>7.</td>
<td>Solar Grade AC Cables</td>
<td>Meter</td>
</tr>
<tr>
<td>8.</td>
<td>ELCB</td>
<td>As required</td>
</tr>
<tr>
<td>9.</td>
<td>SPD</td>
<td>As required</td>
</tr>
<tr>
<td>10.</td>
<td>Earthing System (Chemical Earthing)</td>
<td>2 no.s of separate sets of Earthing Systems with dedicated earth pits, one each for solar PV system and the other for LA. System shall be earthed through appropriate size GI strip.</td>
</tr>
<tr>
<td>11.</td>
<td>Lightening Protection System</td>
<td>Set</td>
</tr>
<tr>
<td>12.</td>
<td>GI pipes for DC / AC cables with necessary accessories</td>
<td>sufficient so as to protect DC and AC cables from module mounting structure to inverter to change over system to pumps to interconnection points.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>---</td>
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</tr>
<tr>
<td><strong>13.</strong></td>
<td>Civil foundations</td>
<td>Suitable pile type foundations with base plate and anchor plate with grouting (depending upon site requirements) for solar system and other electrical equipments, irrigation pump (depending upon site requirements)</td>
</tr>
<tr>
<td><strong>14.</strong></td>
<td>Physical protection of system</td>
<td>Suitably designed cabin with GI roofing at top and door with lock and key arrangements. GI grills in sides to allow ventilation for the systems to be installed in outdoor areas and necessary fence, metal gate with lock and key for locations to be installed within beneficiaries’ premises as per site requirement.</td>
</tr>
<tr>
<td><strong>15.</strong></td>
<td>Weather sensors</td>
<td>1 solar sensor for measurement of GHI, one contact type thermocouple sensor for solar PV module back temperature and one RTD type temperature sensor for ambient air, one wind speed sensor are to be provided with each of the systems with necessary accuracy class.</td>
</tr>
<tr>
<td><strong>16.</strong></td>
<td>Web – box and on-line monitoring</td>
<td>Either built in with grid-tied inverter or separate system with online web-monitoring, data storage and download and system performance / error reports to be provided with each of the system.</td>
</tr>
<tr>
<td><strong>17.</strong></td>
<td>Cable connectors, nuts and accessories</td>
<td>Accessories made with SS in</td>
</tr>
</tbody>
</table>
bolts and metal accessories | appropriate quantity for system + equal quantity as “spares” to be provided

18. Cable dressing | To be done through cable pins made of SS for hanging cables with structures on back of solar PV modules, GI pipes for carrying DC or AC cables

19. Display Board | 1 no. of display board 50 mm x 500 mm x 5 mm thick Al frame duly painted with weather proof paint; 2 mm GI sheet duly painted with weather proof metal color, displaying contents provided by GEC and GERMI. The frame structure needs to be supported with 75 mm Galvanized Iron legs of 50 mm X 50 mm x 5 mm angle duly painted and supported with appropriate RCC footings.

20. Irrigation Pump (DC / AC) set | 10 HP with VFD / Inverter, controller, change over system

21. Bi-directional meter | 1 no. of bi-directional meter (tested and certified by GETCO)

3.2.2. PV MODULE (S)

3.2.2.1. The PV modules can be imported or indigenous as per GEDA / MNRE directives for roof top and solar PV irrigation system.

3.2.2.2. The PV module must be Tier 1 Solar PV module.

3.2.2.3. The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215 / IS 14286. In addition, the modules must conform to
IEC61730-1 requirements for construction & IEC 61730-2 requirements for testing, for safety qualification or equivalent IS. Copy to be provided with tender.

3.2.2.4. For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.

3.2.2.5. The PV modules shall contain poly crystalline silicon solar cells.

3.2.2.6. PV modules containing minimum 72 no. of solar cells with minimum 300 W (DC) output or above output of each under STC should be used. Module capacity less than minimum 300 watts should not be accepted. Photo/electrical conversion efficiency of SPV module shall be greater than 15.0%.

3.2.2.7. Modules shall have minimum 3 no. of bypass diodes. PV modules must be tested and approved by one of the IEC authorized test centers. The terminal box should be preferably be TUV/UL approved.

3.2.2.8. The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum / galvanized iron with minimum 75 micron coating.

3.2.2.9. The tolerance in the rated power capacity of solar PV module shall have maximum tolerance of +3%.

3.2.2.10. The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power. Flash test data with serial no. of modules to be provided by the bidders in excel sheet.

3.2.2.11. Modules shall perform satisfactorily in relative humidity up to 100% with temperatures between -10 °C and +85 °C and with stand gust up to 200km/h from back side of the panel.
3.2.2.12. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of bypass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

3.2.2.13. A strip containing the following details should be laminated inside the module so as to be clearly visible from the front side.

a. Name of the Supplier or distinctive Logo
b. Model or Type No.
c. Serial No.
d. Year of make.

3.2.2.14. The PV module (s) will be warranted for a minimum period of 10 years towards workmanship and 25 years for the performance with maximum degradation of 1 percent per year so as to ascertain 80% of the initial power at the end of 25th year. First year degradation shall not be more than 2.75% and degradation for subsequent years shall not exceed 0.7% of previous years value.

3.2.2.15. IDENTIFICATION AND TRACEABILITY

Each PV module must use a RF identification tag (RFID), which must contain the following information:

a. Name of the manufacturer of PV Module
b. Name of the Manufacturer of Solar cells
c. Month and year of the manufacture (separately for solar cells and module)
d. Country of origin (separately for solar cells and module)
e. I-V curve for the module
f. Peak Wattage, I_m, V_m and FF for the module
g. Unique Serial No and Model No of the module
h. Date and year of obtaining IEC PV module qualification certificate

i. Name of the test lab issuing IEC certificate

j. Other relevant information on traceability of solar cells and module as per ISO 9000 series.

The RFID can be inside the module laminate, but must be able to withstand harsh environmental conditions.

3.2.3. MODULE MOUNTING STRUCTURE

3.2.3.1. The PV modules will be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities up to 150 km per hour.

3.2.3.2. Metallic frame structure of anodized aluminum shall be used for mounting of SPV module. The structure should have seasonal tilt adjustment and manual tracking (3 times a year).

3.2.3.3. The grouting of the frame structure should be done on ground with suitable RCC foundations as per the Indian Standard Codes and soil conditions. All structures should be earthed. It may be ensured that the design has been certified by a recognized Lab/Institution/chartered structural engineer. Certificate needs to be produced to Client. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

3.2.3.4. The Contractor shall submit the detailed structural design analysis along with calculations and bases/standards in the Bid.

3.2.3.5. The mounting structure aluminum / hot dipped galvanized iron with minimum 75 mm micron coating shall be as per latest IS 2062/IS 4759 or equivalent IEC or IS standards, material thickness should be minimum 2.5 mm.
3.2.3.6. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Necessary protection towards rusting need to be provided either by coating or anodization.

3.2.3.7. The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels.

3.2.3.8. The minimum clearance between the lower edge of the module and the ground shall be the higher of (i) above highest flood level at the site and (ii) minimum 1 m.

EARTHING AND SURGE PROTECTIONS

3.2.4. SURGE PROTECTION DEVICE (SPD)

3.2.4.1. Internal surge protection shall consist of MOV type arrestors connected from +ve and –ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition.

3.2.4.2. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC in-built bypass fuse (parallel) which should get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards.

3.2.4.3. Nominal discharge current ($I_n$) at 8/20 micro seconds shall be minimum 10 kA with maximum discharge ($I_{max}$) at 8/20 micro seconds minimum 20 kA with visual indication (through mechanical flag) in modules to monitor the life of SPD.

3.2.5. EARTHING FOR PV ARRAY

3.2.5.1. The photovoltaic modules, BOS and other components of power plant
requires adequate earthing for protecting against any serious faults as guided by IEC 60364.

3.2.5.2. The system shall be totally maintenance free and require no periodic or scheduled maintenance for a period of at least 30 years.

3.2.5.3. The chemical earthing for array and LT power system shall be made with 8-10 inch diameter with suitable electrode rode including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement using Ground Enhancement Material/ backfill compound composition as required as per provisions of IEC 62561/ IS: 3043.

3.2.5.4. Only GI strip of 20 mm width to be used as conductor for LA system and system earthing.

3.2.5.5. There shall be no requirement to add water or any other chemical any time after initial installation.

3.2.5.6. The design of the electrode should have more than 5kA current carrying capacity for 1 second and Electrode dimensions 40 mm diameter & 2000 mm length. The primary conductor should be 25 mm diameter. All conductors should be copper materials.

3.2.5.7. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.

3.2.5.8. Each string/ array and MMS of the plant shall be grounded properly. The array structures are to be connected to earth pits as per IS standards. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.

3.2.5.9. The complete earthing system shall be mechanically & electrically connected to provide independent return to earth.

3.2.5.10. For each earth pit, a necessary test point shall be provided.

3.2.5.11. In compliance to Rule 11 and 61 of Indian Electricity Rules, 1956 (as amended up to date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient
earth electrode.

3.2.5.12. The Bidder shall submit the detailed specifications of the array earthing.

3.2.6. **LIGHTNING PROTECTION FOR PV ARRAY**

3.2.6.1. The source of over voltage can be lightning or other atmospheric disturbance. Main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components as per IEC 60099/IEC 62561.

3.2.6.2. Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to shadow on PV array, maximum wind speed and maintenance requirement at site in future.

3.2.6.3. The lightning conductor shall be earthed through flats and connected to the earth mats as per applicable Indian Standards with earth pits. Each lightning conductor shall be fitted with individual earth pit as per required Standards including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS.

3.2.6.4. Separate chemical earth to be provided for grounding the LA system.

3.2.6.5. Only Gi strip of 20 mm width to be used as conductor for LA system.

3.2.6.6. The Bidder shall submit the drawings and detailed specifications of the PV array lightning protection equipment.

3.2.7. **JUNCTION BOX (JB)**

3.2.7.1. The junction boxes (JB) are to be provided in the PV array for termination of connecting cables. The JB Boxes (JBs) shall be made of GRP/FRP/Powder Coated aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement.

3.2.7.2. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.
3.2.7.3. Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 with EPDM rubber gasket to prevent water entry, Single /double compression cable glands and provision of earthing. It should be placed at 5 feet height or above for ease of accessibility.

3.2.7.4. Each Junction Box shall have High quality Suitable capacity of SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

3.2.7.5. Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.

3.2.8. **MOTOR – PUMP SET**

3.2.8.1. The motor capacity of irrigation pump should be 10 HP submersible with controller with / without brushes.

3.2.8.2. MPPT shall be used to maximize the power output from solar panel and thus water output.

3.2.8.3. Following types of motor pump sets could be used in the SPV water pumping systems:

3.2.8.4. Submersible DC motor pump set

3.2.8.5. Submersible AC motor pump set (single phase or three phase)

3.2.8.6. Shut off Dynamic head of the pump should be 180 meter.

3.2.8.7. In case of AC motor pump set, 10 kVA or suitable capacity of the single phase or three phase Inverter should be used with suitable Variable Frequency Drive (VFD) for pump operation (off-grid inverter).

3.2.8.8. The inverter / controller must have IP 54 protection or must be housed in a cabinet having at least IP54 protection.

3.2.8.9. The water output on any clear sunny day throughout the year shall be minimum 70,000 LPD.

3.2.8.10. The suction head should be minimum 7 meter, in applicable case
3.2.8.11. Adequate protection to be incorporated against dry operation of motor pump set, lightning, full protection against open circuit, accidental short circuit and reverse polarity.

3.2.8.12. All parts of the pump and the motor of the submersible pumps should be made of stainless steel. Pump shall have specially design mechanical seals to ensure zero leakage.

3.2.8.13. The suction/ delivery pipe (GI/HDPE), electric cables, floating assembly, civil work and other fittings required to install the system.

3.2.8.14. The pump and all external parts of motor used in submersible pump which are in contact with water, shall be made of stainless steel. The pumps used for solar application should have a 2 years full replacement guarantee against workmanship and any manufacturing defect and 25 years of service life. Other parts of pump have a much higher durability and do not need replacement or corrode for at least 5 years.

3.2.8.15. The following details should be marked indelibly on the motor pump set:
   a. Name of the Manufacturer or Distinctive Logo
   b. Model Number
   c. Serial Number

3.2.8.16. Provision for remote monitoring of the installed pumps must be made in the controllers or the inverters either through an integral arrangement or through an externally fitted arrangement. It should be possible to ascertain the daily water output, the power generated by the PV array, the UP TIME of the pump during the year, Number of days the pump was unused or under breakdown/repairs.

3.2.9. CABLES & ACCESSORIES

3.2.9.1. For Cables & Accessories following certificates are mandatory: (Copy of the certificate to be provided with tender.)

3.2.9.2. General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 and UV resistant for outdoor installation:
✓ IEC 60189
✓ IS 694/ IS 1554
✓ IS/IEC 69947

3.2.9.3. All the cables which shall be supplied shall be conforming to IS 1554 / 694 Part 1 of 1988 & shall be of 650 V/ 1.1 kV grade as per requirement. Only PVC copper cables shall be used.

3.2.9.4. The size of the cables between array interconnections, array to junction boxes, junction boxes to PCU etc. shall be so selected to keep the voltage drop and losses to the minimum.

3.2.9.5. Certification of cables should be submitted in the tender.

3.2.9.6. Proper laying of cables have to be ensured in appropriate GI/metal pipe as per site requirement. String Cables should be passes from Pipes and Cable ties/saddles shall be used to hold and guide the Pipes (cables/wires) from the modules to pump set or junction boxes. It should be fixed at 1 m interval. The cable conduit pipe, cable tie/saddle must be anticorrosive.

3.2.10. ON/OFF SWITCH AND CHANGE-OVER

3.2.10.1. A reliable manual ON/OFF switch and change-over system to be provided. Sufficient length of cable should be provided for interconnection of the PV array, Controller / Inverter and the motor pump set.

3.2.11. HOUSING FOR ENCLOSURES: The required housing shall be constructed at as per site condition so as to ensure safety of equipments.

3.2.12. SHADOW ANALYSIS: The shadow analysis of the project site has to be carried out by Contractor and shall be submitted to GEC, after placement of work order.

3.2.13. SPARE PARTS: One set of essential spares for the PCU, nuts and bolts, cable clip, clamps etc. shall be provided and made available at the plant.

3.2.14. DISPLAY BOARD: A display board should be installed at site of min. size 4’ x 3’ on two poles. MS Sheet of board shall be of minimum 22 SWG. The text should include information to be provided by GEC. The board should be spray painted, with vinyl letter pasting.
3.2.15. **DOCUMENTATION**: Two sets of installation manual / user manual shall be supplied. The manual shall include complete system details such as array lay out, schematic of the system, motor-pump set details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals.

3.2.16. **TRAINING OF BENEFICIARIES**: Contractor shall provide training to the representatives of beneficiaries.

3.2.17. Detailed drawings with specifications of each component should be submitted with the Technical Bid.

3.2.18. **OTHER FEATURES**

2.9.1.1. An Operation, Instruction and Maintenance Manual in English and the local language should be provided with the system. The following minimum details must be provided in the Manual:

- a. About Photovoltaics
- b. About PV module PV module / Inverter / Pump set / Tracking Mechanism
- c. Guideline with pictorial representation of stepwise instruction of assembling different components for assembling and dismantling with correct sequence
- d. About electronics and different components
- e. Clear instructions on regular maintenance and trouble shooting of the system
- f. DO’s and DON’Ts
- g. Electrical, Chemical hazards
- h. Contact details of the vendor with valid phone numbers of the service engineer

3.2.19. **GUARANTEED PERFORMANCE**

3.2.19.1. The procedure for performance monitoring is based on the standard IEC 61724 – PV system performance monitoring: Guidelines for measurement, data exchange and analysis.
3.2.19.2. Calibrated Solar sensor, two temperature sensors (ambient and module temperature) and anemometer shall be installed by the bidder at the location of the solar PV pumping system on permanent basis which shall be used as reference for measurement of Performance at the time of Commissioning of system and in future.

3.2.19.3. The performance of the system at the time of commissioning shall be measured in the form of water output for entire day. Total solar radiation received during the day and water output shall be measured and recorded. Water output shall not be less than the guaranteed system output on clear sunny day during any day in a year. If radiation is below the reference radiation as mentioned in table below, guaranteed water output shall be reduced proportionately, measured output shall not be less than the output calculated in this manner.

3.2.19.4. During the inspection, the guaranteed output same shall be demonstrated to the Employer. Difference shall be adjusted with difference in GHI values and quantity of water shall be adjusted accordingly which should be equivalent to or greater than minimum guaranteed performance of the system.

3.2.19.5. The monthly average reference irradiation, monthly average temperature and monthly average wind speed for SPV pumping system are given in below table: Bidder shall fill in the water output in the below given table against each month and against reference radiation (GHI). The same needs to be submitted by the bidders along with technical bid.

<table>
<thead>
<tr>
<th>Month</th>
<th>Global Horizontal Irradiance (kWh/m²)</th>
<th>Diffuse Horizontal Irradiance (kWh/m²)</th>
<th>Ambient Temperature (°C)</th>
<th>Wind Speed (m/s)</th>
<th>Average Water Output (LPD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>134.5</td>
<td>41.3</td>
<td>19.8</td>
<td>1.19</td>
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<tr>
<td>February</td>
<td>136.8</td>
<td>54.0</td>
<td>22.7</td>
<td>1.40</td>
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<tr>
<td>Month</td>
<td>Power</td>
<td>Efficiency</td>
<td>Environmental</td>
<td>Standard Description</td>
<td>Standard Number</td>
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<tr>
<td>March</td>
<td>182.1</td>
<td>70.7</td>
<td>27.6</td>
<td>Efficiency Measurements</td>
<td>IEC 61683</td>
</tr>
<tr>
<td>April</td>
<td>189.1</td>
<td>77.4</td>
<td>30.1</td>
<td>Environmental Testing</td>
<td>IEC 60068-2</td>
</tr>
<tr>
<td>May</td>
<td>194.8</td>
<td>95.7</td>
<td>31.3</td>
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<tr>
<td>June</td>
<td>192.9</td>
<td>97.8</td>
<td>31.0</td>
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<tr>
<td>July</td>
<td>168.1</td>
<td>98.6</td>
<td>29.7</td>
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<tr>
<td>August</td>
<td>157.8</td>
<td>96.5</td>
<td>28.2</td>
<td></td>
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<tr>
<td>September</td>
<td>174.2</td>
<td>79.2</td>
<td>28.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>167.5</td>
<td>58.5</td>
<td>29.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>147.5</td>
<td>33.6</td>
<td>25.7</td>
<td></td>
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</tr>
<tr>
<td>December</td>
<td>125.5</td>
<td>39.7</td>
<td>21.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>1910.8</td>
<td>843.0</td>
<td>27.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**3.2.20. Guaranteed Water Output:** On any clear sunny day throughout year, the water output of the system shall be greater than or equal to be 70,000 LPD when water level is above than the shut off head i.e. 180 meter.

**3.2.21. GENERAL CONDITIONS: APPLICABLE TO ALL THE SYSTEMS**

<table>
<thead>
<tr>
<th>Component</th>
<th>Applicable IEC/equivalent BIS Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Description</strong></td>
<td><strong>Standard Number</strong></td>
</tr>
<tr>
<td>Power Conditioners/Inverters</td>
<td>Efficiency Measurements</td>
</tr>
<tr>
<td></td>
<td>Environmental Testing</td>
</tr>
<tr>
<td>Cables</td>
<td>General Test and Measuring Methods PVC insulated cables for working Voltages up to and</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Requirements</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Switches/Circuit Breakers/Connectors</td>
<td>Connectors -safety</td>
</tr>
<tr>
<td>Junction Boxes/Enclosures for inverter/ charge controller/ luminaries</td>
<td>General Requirements</td>
</tr>
</tbody>
</table>

* Must additionally conform to the relevant national/international Electrical Safety Standards

All DC cables should be solar grade cables only and AC cables shall be UV resistant for solar application, concealed in galvanized trays / pipes with minimum 50 cm undergrounded from the top surface of land.
**3 Years (Minimum) Comprehensive Warranty Card.**
*(To be given as directed by GEC after satisfactory commissioning.)*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Name &amp; Address of the manufacturer/ Supplier of the system</td>
<td>------</td>
</tr>
<tr>
<td>2. Name &amp; Address of the Purchasing Agency (GEC)</td>
<td>------</td>
</tr>
<tr>
<td>3. Date of supply of the system</td>
<td>------</td>
</tr>
</tbody>
</table>
| 4. Details of Components supplied in the system  
(e.g. PV Module(s) / Wind Mill / PV Kiosk etc. for each of the items)  
Make (Name of the manufacturer) | ------ |
| Model | ------ |
| Serial No(s) | ------ |
| Wattage of the PV Module(s) under STC | ------ |
| Warranty valid up to | ------ |
| 5. Details of Battery  
Make (Name of the manufacturer) | ------ |
| Model | ------ |
| Batch / Serial No(s) | ------ |
| Rated V & AH capacity at C/20 or C/10 rate at 20 C | ------ |
| Warranty valid up to | ------ |
| 6. Details of Electronics & other BOS items  
Make (Name of the manufacturer) | ------ |
| Model | ------ |
| Serial No(s) | ------ |
| Warranty valid up to | ------ |
| 7. Designation & Address of the person to be Contacted for claiming warranty obligations | ------ |

( Signature)

Name & Designation

Name & Address of the Manufacturer/ Supplier

(SEAL)

Place & Date:

During the 03 Years warranty period, Purchaser / Consultant / Purchaser’s Representatives / users reserve the right to cross check the performance of the system with the minimum performance level specified in the Tender
4. Inspections and Tests

Inspection and tests prior to shipment of goods/ final acceptance are as follows:

**Factory inspection:**

(a) The inspection of the goods shall be carried out to check whether the goods are in conformity with the technical specifications attached to the purchase order form and shall be in line with the inspection/test procedures laid down in the technical specifications and the manufacturer’s warranty certificate.

(b) The purchaser or its authorized representative may visit the Supplier’s factory anytime before the dispatch of the items. Supplier should provide all the access and facilities to the purchaser to carry out the inspection including lodging, boarding, food etc. The travel cost shall be borne by purchaser only.

**Inspection at site after successful commissioning:**

(c) The purchaser will test the equipment after completion of the installation and commissioning at the site. For site preparation, the supplier should furnish all details to the purchaser sufficiently in advance so as to get the works completed before time. Complete hardware and software as specified in section VI should be supplied, installed and commissioned properly by the supplier prior to commencement of performance tests.

(d) The acceptance test will be conducted by a Committee constituted by the Member Secretary, GEC, Gandhinagar, Gujarat and the Committee shall inspect and make recommendations for acceptance of goods & related services offered by the supplier for Final Acceptance by the Project Director, ICZMP, GEC or its representative or both.

The acceptance will involve successful installation, commissioning, performance by the way of trouble-free operation during the acceptance exercise at site. The acceptance exercise shall be combined with the Training exercise to be impacted by the supplier.

There shall not be any additional charges to Purchaser for carrying out acceptance tests. No malfunction, partial or complete failure of any part of hardware should occur. The outputs generated during the acceptance exercise and/or training exercises to demonstrate the successful performance of the equipment, shall be taken into account by the Committee before issuing the Acceptance Certificate

(e) In the event of the equipment failing to pass the acceptance test, a period not exceeding 15 days will be given to rectify the defects and clear the acceptance test, failing which the purchaser reserves the rights to get the equipment replaced by the supplier at no extra cost to the purchaser.
Manuals

(a) Before the goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals together with drawings if any, of the goods and equipment. These shall be in such detail as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.

(b) The manuals shall be in the ruling language (English), Gujarati and in such form and numbers as stated in the contract.

(c) Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purpose of taking over until such manuals and drawings and trainings if any, have been supplied to the Purchaser.

For the System and Other Software the following will apply:

The Supplier shall provide complete and legal documentation of hardware, all subsystems, operating systems, compiler, system software and the other software. The Supplier shall also provide licensed software for all software products, whether developed by it or acquired from others. The supplier shall also indemnify the purchaser against any levies/penalties on account of any default in this regard.

Acceptance Certificate:

On successful completion of acceptability test and training exercise, receipt of deliverables etc, and after the Purchaser is satisfied with the working of the system, the acceptance certificate signed by the supplier and the representative of the purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the systems.
5. PROFORMA OF CERTIFICATE FOR ISSUE BY THE PURCHASER AFTER SUCCESSFUL INSTALLATION AND STARTUP OF THE SUPPLIED GOODS

[This is to be attached for supply, erection, supervision of erection and startup contracts only]

No.

Date:

M/s.

Sub: Certificate of startup of the supplied Goods

1. This is to certify that the plant/s as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para No. 2) and a set of spares in accordance with the Contract/Specifications. The same has been installed and commissioned.

(a) Contract No. and Name_________________________ dated____________________

(b) Description of the Goods______________________________________________

(c) Plant Nos. __________________________________________________________

(d) Quantity ____________________________________________________________

(e) Bill of Landing __________________________ dated________________________
    (for import contract)

(f) Name of the vessel/transporter __________________________________________

(g) Rail/Roadways Receipt No. _______________ dated_______________________

(h) Name of the consignee ________________________________________________

(i) Date of start up and proving test _________________________________
2. Details of accessories/spares not yet supplied and recoveries to be made on that account.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Amount to be recovered</th>
</tr>
</thead>
</table>

3. The proving test has been done to our entire satisfaction and operators have been trained to operate the Goods.

4. The supplier has fulfilled his contractual obligations satisfactorily. *

    or

    The supplier has failed to fulfill his contractual obligations with regard to the following:

    (a)

    (b)

    (c)

    (d)

5. The amount of recovery on account of non-supply of accessories and spares is given under Para No. 2.
6. The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated in endorsement of the letter.

7. The supplier provided Goods as per the technical specification and standard specify in the bid.

8. Supplier has completed ancillary civil, electrical and other jobs as per standards specified in the bid and at satisfactory level to committee

Signature of Committee Member _________________________

Name of Member _________________________________

* Explanatory notes for filling up the certificates:

(a) He has adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to Technical Specifications.

(b) He has supervised the startup of the plan in time i.e., within the period specified in the contract from the date of intimation by the Purchaser in respect of the installation of the plant.

(c) Training of personnel has been done by the supplier as specified in the contract.

(d) In the event of documents/drawings having not been supplied or installation and startup of the plant have been delayed on account of the supplier, the extent of delay should always be mentioned.
6. **Performa for Performance Statement**

[Please see ITB Clause 38.2 and Section III-Evaluation and Qualification Criteria]

Performa for Performance Statement (for a period of last three years)

<table>
<thead>
<tr>
<th>Order placed by (full address of Purchaser)</th>
<th>Order No. and date</th>
<th>Description and quantity of ordered equipment</th>
<th>Value of order</th>
<th>Date of completion of delivery</th>
<th>Remarks indicating reasons for late delivery, if any</th>
<th>Has the equipment been satisfactorily functioning? (Attach a certificate form the Purchaser/Consignee)</th>
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</tbody>
</table>

Signature and seal of the Bidder __________________________________________
7. DECLARATION REGARDING DEEMED EXPORT BENEFITS

Integrated Coastal Zone Management Project (Credit No: # 4765 – IN)

(Bidder’s name and address):

To:………………………………..

(Name of the Purchaser)

Dear Sir:

1. We confirm that we are solely responsible for obtaining deemed export benefits which we have considered in our bid and in case of failure to receive such benefits for reasons whatsoever, Purchaser will not compensate us separately.

2. We are furnishing below the information required by the Purchaser for issue of Project Authority/Payment Certificate in terms of the Export and Import Policy of the Government of India:

(A)  (i) Value of import content of supply to be made by the Bidder:

* Rs. ________________

(Breakup of list of items to be imported with value attached)

(exchange rate on US$ = Rs. ___________)

*
(B) (i) Name of the sub-Supplier, if any, and whose name is to be included in the main Contract:


(ii) Description, quantity and value of the goods to be supplied by the above sub-Supplier:

Description __________________________
Quantity ______________________________
Value (Rs.) ______________________________

(iii) Value of import content of supply to be made by the sub-contractor:

Rs. ___________________
(exchange rate on US$ = Rs. ________)

(The requirements listed above are as per current Export and Import Policy of Government of India. These may be modified, if necessary, in terms of the Export and Import Policy in force.)

Date: ___________________________ (Signature) ___________________________

Place: ___________________________ (Printed Name) __________________________

(Designation) __________________________

(Common Seal) __________________________

* Please attach details item-wise with cost.
PART 3 – CONTRACT
SECTION VII – GENERAL CONDITIONS OF CONTRACT
Section VII. General Conditions of Contract

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Section VII. General Conditions of Contract

1. Definitions

The following words and expressions shall have the meanings hereby assigned to them:

(a) “Bank” means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto.

(d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(e) “Day” means calendar day.

(f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(g) “GCC” means the General Conditions of Contract.

(h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(i) “Purchaser’s Country” is India.

(j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC.

(k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, start-up, training and initial maintenance and other such obligations of the Supplier under the Contract.

(l) “SCC” means the Special Conditions of Contract.
Subcontractor” means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

“Supplier” means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.

“The Project Site,” where applicable, means the place named in the SCC.

2. Contract Documents

Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Fraud and Corruption

If the Purchaser determines that the Supplier and/or any of its personnel, or its agents, or its Subcontractors, consultants, service providers, suppliers and/or their employees has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Purchaser may, after giving 14 days notice to the Supplier, terminate the Supplier's employment under the Contract and cancel the contract, and the provisions of Clause 35 shall apply as if such expulsion had been made under Sub-Clause 35.1.

(a) For the purposes of this Sub-Clause:

(i) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a

---

6 “Another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.
financial or other benefit or to avoid an obligation;  

(iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) “obstructive practice” is

(a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under Clause 11 [Inspections and Audits by the Bank].

3.2 Should any employee of the Supplier be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the purchase of the Goods, then that employee shall be removed.

4. Interpretation  
4.1 If the context so requires it, singular means plural and vice versa. 
4.2 Incoterms

7 “Party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

8 “Parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non-competitive levels.

9 “Party” refers to a participant in the procurement process or contract execution.
Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.

The terms EXW and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms specified in the SCC and published by the International Chamber of Commerce in Paris, France.

4.2 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.

4.3 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.4 Non-waiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party’s rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.5 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be English. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in English language, in which case, for purposes of interpretation of the Contract, this translation shall govern.
5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. Deleted

7. Eligibility

7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.

7.2 All Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in Eligible Countries. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

8. Notices

8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term “in writing” means communicated in written form with proof of receipt.

8.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

9. Governing Law

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Union of India.

10. Settlement of Disputes

10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

10.3 Notwithstanding any reference to arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
11. Inspections and Audit by the Bank

The Supplier shall permit, and shall cause its Subcontractors and consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Supplier’s offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Supplier’s and its Subcontractors and consultants’ attention is drawn to Clause 3 [Fraud and Corruption], which provides, inter alia, that acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under this Sub-Clause 11.1 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank’s prevailing sanctions procedures).

12. Scope of Supply

The Goods and Related Services to be supplied shall be as specified in the Special Condition of Contract.

13. Delivery and Documents

Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.

14. Supplier’s Responsibilities

The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.

15. Contract Price

Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.

16. Terms of Payment

The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in the SCC.

The Supplier’s request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.

Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

The payments shall be made in Indian Rupees to the Supplier under this Contract.

In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the
SCC, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the SCC, for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

17. Taxes and Duties
The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

18. Performance Security
18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount specified in the SCC.

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier’s failure to complete its obligations under the Contract.

18.3 As specified in the SCC, the Performance Security shall be denominated in the Indian Rupees, and shall be in one of the format stipulated by the Purchaser in the SCC, or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier’s performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.

19. Copyright
19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

20. Confidential Information
20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes
unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.

20.3 The obligation of a party under GCC Sub-Claus 20.1 and 20.2 above, however, shall not apply to information that:

(a) the Purchaser or Supplier need to share with the Bank or other institutions participating in the financing of the Contract;

(b) now or hereafter enters the public domain through no fault of that party;

(c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the bid. Such notification, in the original bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. Specifications and Standards

22.1 Technical Specifications and Drawings

(a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VI, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods’ country of origin.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract
execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods’ final destination and the absence of heavy handling facilities at all points in transit.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

24. Insurance

24.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC.

25. Transportation

25.1 Unless otherwise specified in the SCC, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

26. Inspections and Tests

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the SCC.

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods’ final destination, or in another place in the Purchaser’s Country as specified in the SCC. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary
permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract, provided that the Supplier’s reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier’s performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in those SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from
any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier’s risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser’s compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney’s fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.
29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser’s name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier’s request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney’s fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct,
(a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and
(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in India, where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that
subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

(b) the method of shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be
amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier’s receipt of the Purchaser’s change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier’s notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier’s time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;

(ii) if the Supplier fails to perform any other obligation under the Contract; or

(iii) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause 3, in competing for or in executing the Contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate,
Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.
(a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

35.3 Termination for Convenience.
(a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser’s convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier’s receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
   (i) to have any portion completed and delivered at the Contract terms and prices; and/or
   (ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment
Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.
Section VIII. Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

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<tr>
<th>GCC 1(j)</th>
<th>The Purchaser is:</th>
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<td>Director</td>
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<tr>
<td></td>
<td>Gujarat Ecology Commission</td>
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<td></td>
<td>Block No. 18, 1st Floor, Udhyog Bhavan, Sector 11, Gandhinagar-382011, Gujarat</td>
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| GCC 1 (o) | Final destination (Project Site): As specified in Schedule of Requirements |

| GCC 4.2 (a) | The meaning of the trade terms shall be as prescribed by Incoterm. |

| GCC 4.2 (b) | The version edition of Incoterm shall be Latest Version of 2010 |

<table>
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<tr>
<th>GCC 8.1</th>
<th>For notices, the Purchaser’s address shall be:</th>
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<th>GCC 10.2</th>
<th>Settlement of Disputes</th>
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<td>The dispute settlement mechanism to be applied shall be as follows:</td>
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<td>(a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Chairman of the Institution of Engineers (India), Gujarat Chapter, Ahmedabad.</td>
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<td>(b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Institution of</td>
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Engineers (India), Gujarat Chapter, Ahmedabad, both in cases of the Foreign supplier as well as Indian supplier, shall appoint the arbitrator. A certified copy of the order of the Institution of Engineers (India), Gujarat Chapter, Ahmedabad, making such an appointment shall be furnished to each of the parties.

(d) Arbitration proceedings shall be held at Gandhinagar, Gujarat, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.

(e) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.

(f) Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the Institution of Engineers (India), Gujarat Chapter, Ahmedabad.

(g) Except otherwise agreed to by the Parties, Arbitrators should give a decision in writing within 120 days of receipt of notification of dispute.

GCC 12.1 The scope of supply for the Goods and Related Services to be supplied shall be as specified below: The scope of works includes supplying, laying, Jointing, testing, commissioning includes 3 Years Comprehensive Warranty Period incl spare parts.

GCC 13.1 Details of Shipping and other Documents to be furnished by the Supplier are given below:

GCC 13.1 Upon delivery of the goods to the transporter/consignee, the supplier shall notify the purchaser and mail the following documents to the Purchaser:

(i) Two Copies of the Supplier invoice showing contract number, goods description, quantity, unit price, total amount;

(ii) Delivery note, Railway receipt, or Road consignment note or equivalent transport document or acknowledgement of receipt of goods from the Consignee;

(iii) Two Copies of packing list identifying contents of each package;
(iv) Insurance certificate;
(v) Manufacturer’s/Supplier’s warranty certificate;
(vi) Inspection certificate issued by the nominated inspection agency if any, and the Supplier’s factory inspection report; and
(vii) Certificate or origin.

The above documents shall be received by the Purchaser before arrival of the Goods (except where it is handed over to the Consignee with all documents) and if not received, the supplier will be responsible for any consequent expenses.

**GCC 15.1**

The prices charged for the Goods supplied and the related Services performed **shall not** be adjustable.

**GCC 16.1**

Payment shall be made in the currency specified in the Contract in the following manner:

(a) Payment for Goods

   (i) Advance payment: Ten (10) % of the Contract Price shall be paid as Advance against Bank Guarantee of equivalent amount on signing of the Contract agreement. This Bank Guarantee will be returned back once installation and commissioning is completed.

   (ii) On Delivery: Thirty (30) % of the Contract Price shall be paid on receipt of Goods and upon submission of the documents specified in Clause 13 of SCC by Bank transfer/cheque;

   **If supplier do not choose to take advance payment of 10% then second installment will be released @ of 40% of contract price.**

   (iii) On Installation and commissioning: Next Forty (40) % of the Contract Price shall be paid on Installation, connection and first commissioning of the Applications;

   (iv) On completion one week: Twenty (20) % of the Contract Price shall be paid on completion of one week of successful functioning of the Applications installed.

   (b) Deleted.

   (c)(i) Where payments are to be effected through Letter of Credit (LC), the same shall be subject to the latest Uniform Customs and Practice for
Documentary Credit, of the International Chamber of Commerce;

(ii) The LC will be irrevocable and will be confirmed at Supplier’s cost if requested specifically by the Supplier;

(iii) If LC is required to be extended/reinstated for reasons not attributable to the Purchaser, the charges thereof shall be to the Supplier’s account.

(d)(i) For all the payments to be made, against Bank guarantees, the bank guarantee shall be issued by a Scheduled Indian Bank or a foreign bank located in India in the format enclosed at Section VIII. The guarantees issued by other banks should be confirmed by a Scheduled Indian Bank or a foreign bank operating in India.

(ii) Bank guarantees for advance payment shall be released not later than 30 days after the date of completion of supply of the goods at their final destination and commissioning of equipments.

GCC 16.5 No Interest rate for delayed payment shall be given.

GCC 17 In the case of Excise duty waiver, the purchaser will issue only the certificates in terms of the Central Excise notification as per information given by supplier in form at serial no.8 of Section VI. Supplier is solely responsible for obtaining such benefits and in case of failure to receive such benefits, the purchaser will not compensate the supplier separately.

GCC 18.1 Performance Security to the Purchaser shall be for an amount of 10% of the contract value, valid up to 60 days after the date of completion of three years warranty obligation, from satisfactorily installation and commissioning performance of equipment, issued by the competent Authority.

In the event of any correction of defects or replacement of defective material during the three years warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value shall be extended 60 days over and above the extended warranty period.

The Performance Security will be forfeited if the supplier fails to provide satisfactory performance services during three years comprehensive warranty.

GCC 18.3 If required, the Performance Security shall be in the form of a “Bank Guarantee” or “a cashier’s cheque or banker’s certified cheque or crossed demand draft or pay order” drawn in favour of the Purchaser.

GCC 18.4 Substitute Clause 18.4 of the GCC by the following:
The performance Security will be discharged by the Purchaser and returned to the Supplier not later than 28 days following the date of issue of completion certificate by the competent Authority after three years comprehensive warranty period.

**GCC 23.2**  
**Packing Instructions:** The Supplier will be required to make separate packages for each Consignee. Each package will be marked on three sides with proper paint/indelible ink with the following:

(i) Project; (ii) Contract No.; (iii) Country of Origin of Goods; (iv) Supplier’s Name; (v) Packing List Reference Number.

Suppliers should use recycled materials as much as possible for packing.

**GCC 24.1**  
The insurance shall be paid in an amount equal to 100 percent of the CIF or CIP (EXW for Goods supplied from within the country) value of the Goods from “Warehouse to warehouse (final destination)” on “All Risks” basis including War Risks and Strikes, valid for a period not less than 3 months after installation and commissioning and issue of acceptance certificate by the purchaser.

**GCC 24.2**  
Should any loss or damage occur, the Supplier shall -

a) initiate and pursue claim till settlement, and

b) Promptly make arrangements for repair and/or replacement of any damaged item/s and ensure supply/commissioning as per terms of the contract, irrespective of settlement of claim by the underwriters.

**GCC 25.1**  
The Supplier is required under the Contract to transport the Goods duly insured to the specified final destination, and all related costs shall be included in the Contract Price.

**GCC 26.1**  
The inspections and tests shall be: As stated in Section 5 of schedule of requirements.

**GCC 26.2**  
The Inspections and tests shall be conducted at the sites of Final Delivery as specified in the BDS corresponding to clause 14.6 of ITB.

**GCC 27.1**  
The liquidated damage shall be: 0.5% of contract price per week or part thereof.

**GCC 27.2**  
The maximum amount of liquidated damages shall be: 10% of the contract price.

**GCC 28.3**  
The Supplier shall, in addition, comply with the performance guarantees specified under the Contract. If, for reasons attributable to the supplier, these guarantees are not attained in whole or in part, the Supplier shall, make such changes, modifications, and/or additions to the Goods or any part thereof as
may be necessary in order to attain the guarantees specified in the contract at its own cost and expense and to carry out further performance tests in accordance with GCC 26.2.

For purposes of the Warranty, the place(s) of final destination(s) shall be: same as place of final destination. (Please refer BDS corresponding to clause 14.6)

<table>
<thead>
<tr>
<th>GCC 28.5</th>
<th>The period for repair or replacement shall be: 15 days.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC 28.7.1</td>
<td>After completion of satisfactory installation, commissioning of equipments at specified locations, 3 years comprehensive warranty of the entire system including supply of spares free of cost to the purchaser for next 36 months will be done by the supplier. After completion of three years warranty obligation satisfactorily the completion certificate will be issued by the competent Authority for release of performance security.</td>
</tr>
<tr>
<td>GCC 28.7.2</td>
<td>The maximum response time for a maintenance complaint from any of the destination specified in the schedule of requirements (i.e. time required for supplier’s maintenance engineers to report to the installations after a request call/telegram/fax is made or letter is written) shall not exceed three days.</td>
</tr>
<tr>
<td>GCC 28.7.3</td>
<td>It is expected that the average downtime of an item will be less than half the maximum downtime (i.e. defined as number of days for which an item of equipment is not usable because of inability of the supplier to repair it) as mentioned in the form of technical details. In case an item is not usable beyond the stipulated maximum downtime the supplier will be required to arrange for an immediate replacement of the same till it is repaired. Failure to arrange for the immediate repair/replacement will be liable for penalty of Rs 2500.00 per day per item. The amount of penalty will be recovered from bank guarantee during warranty or annual maintenance period as the case may be.</td>
</tr>
<tr>
<td>GCC 31.1</td>
<td>This clause will apply only to variations in VAT/Sales tax/ Octroi/GST, etc. payable in India on the final product which is being supplied and not for the individual components / raw materials which go into the product.</td>
</tr>
</tbody>
</table>
# Section IX – Contract Forms

## Table of Forms

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4. **BANK GUARANTEE FOR ANNUAL MAINTENANCE** ....................... 226
1. **CONTRACT AGREEMENT**

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS CONTRACT AGREEMENT is made

the [insert: number] day of [insert: month], [insert: year].

BETWEEN

(1) [insert complete name of Purchaser], a [insert description of type of legal entity, for example, an agency of the Ministry of......... of the Government of {insert name of Country of Purchaser}, or corporation incorporated under the laws of {insert name of Country of Purchaser}] and having its principal place of business at [insert address of Purchaser] (hereinafter called “the Purchaser”), and

(2) [insert name of Supplier], a corporation incorporated under the laws of [insert: country of Supplier] and having its principal place of business at [insert: address of Supplier] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency(ies)] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:

(a) This Contract Agreement
(b) Special Conditions of Contract
(c) General Conditions of Contract
(d) Technical Requirements (including Schedule of Requirements and Technical Specifications)
(e) The Supplier’s Bid and original Price Schedules
(f) The Purchaser’s Notification of Award
(g) Performance Security
(h) [Add here any other document(s)]
3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of [insert the name of the Contract governing law Country] on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed:  [insert signature]

in the capacity of [insert title or other appropriate designation]

in the presence of [insert identification of official witness]

For and on behalf of the Supplier

Signed:  [insert signature of authorized representative(s) of the Supplier]

in the capacity of [insert title or other appropriate designation]

in the presence of [insert identification of official witness]
2. PERFORMANCE SECURITY

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

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

NCB No. and title: [insert no. and title of bidding process]

Bank’s Branch or Office: [insert complete name of Guarantor]

Beneficiary: [insert complete name of Purchaser]

PERFORMANCE GUARANTEE No.: [insert Performance Guarantee number]

We have been informed that [insert complete name of Supplier] (hereinafter called "the Supplier") has entered into Contract No. [insert number] dated [insert day and month], [insert year] with you, for the supply of [description of Goods and related Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a Performance Guarantee is required.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum(s) not exceeding [insert amount(s)\(^{10}\) in figures and words] upon receipt by us of your first demand in writing declaring the Supplier to be in default under the Contract, without cavil or argument, or your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This Guarantee shall expire no later than the [insert number] day of [insert month][insert year],\(^{11}\) and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15 (a) is hereby excluded.

[signatures of authorized representatives of the bank and the Supplier]

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\(^{10}\) The Bank shall insert the amount(s) specified in the SCC and denominated, as specified in the SCC, either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Purchaser.

\(^{11}\) Dates established in accordance with Clause 17.4 of the General Conditions of Contract ("GCC"), taking into account any warranty obligations of the Supplier under Clause 15.2 of the GCC intended to be secured by a partial Performance Guarantee. The Purchaser should note that in the event of an extension of the time to perform the Contract, the Purchaser would need to request an extension of this Guarantee from the Bank. Such request must be in writing and must be made prior to the expiration date established in the Guarantee. In preparing this Guarantee, the Purchaser might consider adding the following text to the Form, at the end of the penultimate paragraph: “We agree to a one-time extension of this Guarantee for a period not to exceed [six months] [one year], in response to the Purchaser’s written request for such extension, such request to be presented to us before the expiry of the Guarantee.”
3. BANK GUARANTEE FOR ADVANCE PAYMENT

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated.]

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

NCB No. and title: [insert number and title of bidding process]

[bank’s letterhead]

Beneficiary: [insert legal name and address of Purchaser]

ADVANCE PAYMENT GUARANTEE No.: [insert Advance Payment Guarantee no.]

We, [insert legal name and address of bank], have been informed that [insert complete name and address of Supplier] (hereinafter called “the Supplier”) has entered into Contract No. [insert number] dated [insert date of Agreement] with you, for the supply of [insert types of Goods to be delivered] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, an advance is to be made against an advance payment guarantee.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount(s)] 12 in figures and words] upon receipt by us of your first demand in writing declaring that the Supplier is in breach of its obligation under the Contract because the Supplier used the advance payment for purposes other than toward delivery of the Goods.

It is a condition for any claim and payment under this Guarantee to be made that the advance payment referred to above must have been received by the Supplier on its account [insert number and domicile of the account]

This Guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until [insert date] 13.

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12 The bank shall insert the amount(s) specified in the SCC and denominated, as specified in the SCC, either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Purchaser.

13 Insert the Delivery date stipulated in the Contract Delivery Schedule. The Purchaser should note that in the event of an extension of the time to perform the Contract, the Purchaser would need to request an extension of this Guarantee from the bank. Such request must be in writing and must be made prior to the expiration date established in the Guarantee. In preparing this Guarantee, the Purchaser might consider adding the following text to the Form, at the end of the penultimate paragraph: “We agree to a one-time extension of this..."
This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article 15 (a) is hereby excluded.

Notes:


2. Any questions regarding this list should be addressed to the Senior Manager, Procurement Policy and Services Group, Operational Core Services Network, The World Bank

INTEGRATED COASTAL ZONE MANAGEMENT PROJECT

Guarantee for a period not to exceed [six months]/[one year], in response to the Purchaser’s written request for such extension, such request to be presented to us before the expiry of the Guarantee.”
State Project Management Unit (SPMU)
Gujarat Ecology Commission
Udyog Bhavan, Block No. 18, 1st Floor, Gandhinagar – 382 010, Gujarat

National Competitive Bidding (NCB)

IFB No. SPMU/GEC/NCB/02/2017-18
Dt.: 21/08/2017

Additional Project Director, ICZM Project, SPMU, Gujarat Ecology Commission, Block No. 18, 1st Floor, Udyog Bhavan, GH Road, Gandhinagar (phone no. (079) 23257656), Gujarat, India, invites sealed bids from eligible and qualified bidders for SUPPLYING & INSTALLATION AND COMMISSIONING OF SOLAR RENEWABLE ENERGY APPLICATION under ICZMP as tabulated below. For full details of the Bid documents please refer our project website www.geciczmp.com and www.germi.org.

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Cost of Bid document in Rs</th>
<th>Bid Security(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grid Connected Rooftop Solar PV Power System</td>
<td>No</td>
<td>71 Nos.</td>
<td>5000/-</td>
<td>3,92,500.00</td>
</tr>
<tr>
<td></td>
<td>c) 3 kW Capacity</td>
<td>No</td>
<td>71 Nos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) 5 kW Capacity</td>
<td>No</td>
<td>1 No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grid Connected 10 HP Solar PV Irrigation Pumping System</td>
<td>Set</td>
<td>11 Set</td>
<td></td>
<td>2,20,000.00</td>
</tr>
</tbody>
</table>

1) Sale of bidding document
2) Last date & Time of bid submission
3) Date & Time of Bid opening
4) Pre-Bid meeting

1) 21/08/2017 to 20/09/2017
2) 21/09/2017 up to 12.00 hrs
3) 21/09/2017 at 12.30 hrs
4) 04/09/2017 at 12:00 hrs

Add. Project Director, SPMU-ICZM Project
email: mail@geciczmp.com; Tel: 079-23257656, 23257659