



U&M DEPARTMENT MRS SECTION

Tender No.: U&M/MRS/T/002/20-21

Date: 05.08.2020

TENDER NOTICE

Sealed two-bid mode tenders in the prescribed form are invited on behalf of Cochin Shipyard Limited from experienced contractors for the under mentioned work on Turn Key, so as to reach the undersigned on or before the date and time mentioned below. The tenders should be submitted in three separate envelopes superscribing the details as shown below.

Cover 1: Cost of tender form and EMD

Cover 2: Technical Bid

Cover 3: Price bid

Tender No. & date	U&M/MRS/T/002/20-21, 05.08.2020
Name of work	Design, supply, installation, testing and commissioning of 70 kWp grid connected solar photovoltaic power plant at roof top of METI, Girinagar of Cochin Shipyard Limited
Tender Cost	Rs. 100/- + 12 % GST
Earnest Money to be deposit	Rs. 70,000/-
PAC	Rs. 35,00,000/-
Site study at METI, Girinagar	13.08.2020 at 10:30 Hrs.
Last date & time of receipt of tender	27.08.2020 up to 14:00 Hrs.
Date & time of opening of tender	27.08.2020 at 14:30 Hrs.
Time of completion of work	120 Days after the mobilization period

Sealed tenders addressed to The Assistant General Manager (U&M) shall be dropped in tender box at Utilities & Maintenance Department, Cochin Shipyard Limited, Perumanoor P.O. Kochi – 682015, Kerala, India or to be sent by registered post so as to reach this office by due date and time. CSL will not be responsible for postal delay or non-delivery/non-receipt of tender documents.

Officer - in - Charge for the above work

Name	: Saifudeen A S
Designation	: Senior Manager (MRS)
Contact No. (M)	: +91 9895 765873
Contact No. (L)	: +91 484 250 1509
E-mail	: saifudeen.as@cochinshipyard.com

For Cochin Shipyard Limited

साइफुदेन ए एस/SAIFUDEEN A S
प्रधान प्रबन्धक/ Senior Manager
कोचीन शिपयार्ड लिमिटेड
Cochin Shipyard Limited
कोची / Kochi - 682 015

Signature and Seal of the Contractor (s)

General Manager (U&M)



पंजीकृत कार्यालय : प्रशासनिक भवन, पी.ओ.बैग सं 1653, पेरुमानूर पी. ओ., कोची - 682 015
Registered Office : Administrative Building, P.O. Bag No. 1653, Perumanoor P.O., Kochi - 682 015
फोन / Phone : +91(484) 2361181 / 2501200 फाक्स / Fax : +91 (484) 2370897 / 2383902
वेबसाइट / Website : www.cochinshipyard.com, सीआईएन / CIN: L63032KL1972GOI002414

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Note:-

1. The bidder has to conduct a preliminary study of the CSL site for the actual design conditions for designing and setting up an optimum solar power plant of a capacity 70 kWp at roof top of METI buildings, Girinagar.
2. This is a **turnkey job** and all required materials for the setting up of the system should be supplied by the contractor/bidder.
3. It may please note if any of the dates mentioned above is declared a public holiday, the dates mentioned above shall be extended to the next working day.
4. Any clarifications sought for this tender shall be done in writing/telephone/email to the following address/email id:

Mr. Saifudeen A S
 SM (MRS)
 U&M Department
 Email: saifudeen.as@cochinshipyard.com
 Mob: +91 9895 765 873, +91 484 250 1509

For Cochin Shipyard Limited


 साईफुदीन ए एस/SAIFUDEEN A S
 वरिष्ठ प्रबन्धक/ Senior Manager
 कोचीन शिपयार्ड लिमिटेड
 Cochin Shipyard Ltd.
 कोच्ची / Kochi - 682 015

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GUIDELINES & ELIGIBILITY CRITERIA

The documents to prove minimum eligibility criteria as given below should be submitted in a separate envelope super scribing "Documents related to minimum eligibility criteria" in the technical bid. However, a single set of eligibility documents is to be submitted by the bidders. The following criteria shall be eligible to apply:

1. The Bidder should have had an average annual financial turnover of Rs. 11 Lakhs during the last 3 consecutive financial years.
2. The bidder should submit the detailed project report including drawings, list of manufactures, type, size, and other technical data of the equipments specified in technical specification for the plant along with the offer. Offers without such information will not be eligible for consideration. A team of CSL official may visit the facilities of the bidders, and the projects executed for verification. **Details of the changes/additional requirements in the existing electrical system in the Marine Engineering Training Institute, Girinagar for getting necessary statutory approval from KSEBL/CEA is to be included in the detailed project report.**
3. The bidder should have service center in Kerala state to provide necessary after sales service to CSL during the warranty period. Documentary evidences for the details of service centers in Kerala should be enclosed with the offer.
4. Bidder should have experience in design, manufacture, supply, installation and commissioning of Solar PV power plant and having successfully completed similar works during the last 7 years ending last day of month previous to the one in which tenders are invited should be either of the following:
 - a) Three similar completed works of capacity not less than 28 kWp each (40%)
OR
 - b) Two similar completed works of capacity not less than 35 kWp each (50%)
OR
 - c) One similar completed works of capacity not less than 56 kWp each (80%)

Details of orders executed along with completion certificate (self attested copy) from the client indicating the performance, capacity and the value of work executed should be submitted along with the Technical bid.

5. The bid should accompanied by tender cost & Earnest Money Deposit stipulated in the tender notice by demand draft/banker's cheque (EMD & Tender cost should be submitted separately) from any Nationalized Banks drawn in favour of CSL payable at Ernakulam.
6. Tender shall be submitted in three separate sealed covers as given below superscribing the name of work, address of the tenderers.

Cover – 1 (Tender Cost & EMD)

- a) Tender cost in the form of demand draft.
- b) EMD in the form of demand draft/banker's cheque/ FDR valid for three months from the date of tender opening.

Cover – 2 (Eligibility Criteria & Technical Documents)

- a) Document related to eligibility criteria.
- b) All technical documents duly filled and sealed in all pages including un-priced price bid (separate cover).
- c) Eligibility Criteria of the offer will be opened first. The techno commercial evaluation will be carried out only for those tenderers fulfilling the eligibility criteria. The Price Bid of offer of Non-eligible bidders (those are not fulfilling minimum eligibility criteria, technical specification and commercial terms) shall not be opened. CSL reserves the right to reject any or all offers without assigning any reason whatsoever.

Cover – 3 (Price Bid)


- a) Quoted price bid duly signed and sealed.

Tender document duly filled and signed along with official seal must be put in the proper envelope, duly sealed with clear recording of the tender notice number and due date on the envelope and should be submitted to this office as per the date stipulated.

INSTRUCTION TO BIDDER

1. The bidder shall be deemed to have carefully examined the technical specifications, special & general terms and conditions, work schedules and also to have satisfied himself as to the nature and character of the plant and equipment to be supplied and installed under the contract, the site conditions and all relevant matters & details. The bidder must visit the site and take first hand information related to the contract before submission of tender.
2. The bidder shall note that any conditional offer will not be considered.
3. All pages of offers including bids, technical specifications, supporting documents etc. are to be signed by authorized signatory in each page and company seal should be affixed on each page. In case of non-compliance, offer is liable for rejection.

For Cochin Shipyard Limited


General Manager (U&M) Cochin Shipyard Ltd.
कोचीन शिपयार्ड लिमिटेड
कोच्ची / Kochi-682 015

Signature and Seal of the Contractor(s)

Tender No.: U&M/MRS/T/002/20-21

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SCOPE OF WORK

1. The scope of work includes site study, design, supply, installation, testing and commissioning of **70kWp grid connected solar power plants at roof top of METI, Girinagar** of Cochin Shipyard Limited. This is a **turnkey job**; all the materials required for the satisfactory completion of the project should be supplied and installed by the contractor.
2. The scope includes supply and installation of poly/mono crystalline solar panels, power conditioning units (PCU), module mounting structures, junction boxes, DCDB, ACDB, cables and accessories, net metering facility, data logging system, cleaning system, earthing & lightning protection including connected civil works and testing, commissioning of the plant etc. The work has to be carried out as complying with the technical requirements/standards for SPV systems/power plants, defined under the programmes of ministry of new and renewable energy (MNRE).
3. The bidder should note that the specifications furnished in the tender is of general nature only and it is the responsibility of the bidder to design, supply, install, commission and put in operation of the equipment and services required for the satisfactory performance of the solar power system. The Solar PV system shall be synchronized with existing power system.
4. **The contractor should submit the detailed project report including drawings, list of manufactures, type, size, and other technical data of the equipments as specified in technical specification for the plant. Details of the changes required in the existing electrical system including the replacement of existing HT unidirectional energy meter with Bidirectional energy meter as per the guidelines of KSEBL/CEA in the METI, Girinagar for getting necessary statutory approval from KSEBL/CEA is to be included in the detailed project report and the installation of the above is under the scope of the contractor.**
5. **Supply of of LT current transformers, Solar meters, HT bidirectional energy meters and testing and calibration of these meters and CTs in KSEBL approved laboratories is under the scope of the contractor.**
6. **Obtaining energisation approval from CEA after fulfilling the requirements of the inspection is under the scope of the contractor. Modification if any suggested by the authorities during their inspection shall be carried out without any extra cost.**
7. Pre- commissioning testing of solar plant shall be the responsibility of the contractor.
8. The energy meter for recording Solar electricity generated and the two way energy meter for net metering has to be got tested from the authorised meter testing facility of the Distribution Licensee before installation. Unidirectional meter shall be installed near the existing HT meter as per the requirement of distribution licensee for taking monthly readings.
9. Before establishing connectivity with grid, the system has to be tested in the presence of the representative of the Distribution Licensee and clearance has to be obtained. The responsibility for conducting pre-commissioning test lies with the contractor installed the system. The installation shall be considered as completed only after testing and commissioning of the system. The cost or fees if any, for the testing after completion of installation for establishing connectivity has to be met by the contractor.

10. Necessary formalities like preparation and submission of application and other documents for getting the clearance from the Distribution Licensee and execution of connectivity/banking/power purchase agreement with Distribution Licensee has to be arranged by the contractor.
11. The Contractor shall obtain necessary statutory approvals of the Electrical Inspectorate/CEA, State Pollution Control Board and any other state and local authorities as may be required and the incidental expenses for obtaining such approvals shall be included in the Contract price.
12. All the necessary details, drawings and submission of application will be furnished by the contractor for verification/signature.
13. Wherever necessary or required, the Supplier shall furnish the test and/or inspection certificates from the appropriate authorities as per statutory regulations and the cost for obtaining these certificates shall be included in the Contract price.
14. As the work is to be done above the roof tops of METI buildings mentioned above, sufficient safety measures to be made. The Safety precautions for the work of solar power plant at the roof top of buildings for affixing module mounting structure and Solar modules are as follows.
 - A safe means of access to the work area/ roof top shall be ensured. They shall be kept free from obstructions, substances and materials.
 - The supervisor of the contractor must ensure the workers are provided with the necessary Personnel Protective Equipments before the work starts. He shall also ensure that they use it appropriately.
 - The Contractor shall inform the workers about the CSL HSE requirements to the workers through Tool Box Talk.
 - There will be CSL Supervision during the period of work.
 - Permit to work on Installations will be obtained for this work and this will be renewed regularly.
15. The array yard should have permanent water line system for cleaning the entire module. The cleaning system involves valve and heavy duty rubber hose. All pipes to be used in the system should be of heavy duty PVC.
16. **Contractors are expected to visit CSL site to design the mounting structure and other related parameters for the solar power plant to be installed in the roof top of METI, Girinagar for preparation of detailed project report.**
17. The work involves:
 - a) Supply and installation of Solar PV modules, Power Conditioning Units, array junction boxes, AC distribution board, power and control cables including terminations, net metering , earthing & lightning protection system, data acquisition system with remote monitoring facilities, water pipe line system etc.
 - b) Point of connection with the KSEBL is 11kV. Present unidirectional meter is to be changed to the HT bidirectional energy meter. In addition to this, Solar LT meter shall also be provided near to the HT meter including its cabling work. Supply, Installation, commissioning and all the associated liasoning work relating to the above is under the scope of the contractor.
 - c) Transportation, loading, unloading, loading and storage of all equipments / materials is also under the scope of the contractor.
 - d) Contractor shall be responsible for obtaining all statutory clearances/approvals from Electrical Inspectorate/ CEA/ KSEBL for the new grid connected solar power plant installed at **METI,Girinagar.**

Note: Unless otherwise indicated/specified, the quantity required shall be shown as per the design parameters/ requirement projected by the contractor for the plant. Any other items other than the above required for the successful commissioning and satisfactory performance of the system must be explicitly mentioned.

APPROVAL OF SYSTEM DESIGN:

The bidder to ensure proper system designing that would include his own independent studies on peak sunshine data, resulting in the correct sizing of equipment for the solar energy system. It is therefore *very important to form proper design procedures and component sizing before actual implementation.* The design procedures and component sizing shall be as per internationally acceptable standards. The concept plan/ design of each subsystem shall be submitted to CSL for prior approval. Quality Assurance Plan should include design control, process control, quality control, testing of sub-system, integration and bill of material intended to be used.

Errors and Omissions:

- a) The contractor shall be responsible for all discrepancies, errors and omissions in the drawings, documents or other information submitted by him, irrespective of whether these have been approved, reviewed or otherwise accepted by CSL or not.
- b) The contractor shall take all corrective measures arising out of discrepancies, errors and omissions in drawings and other information within the time schedule and without extra cost
- c) The Contractor shall also be responsible for any delay and/or extra cost if any, in carrying out engineering, and site works by other agencies arising out of discrepancies, errors and omissions stated in above as well as of any late revisions of drawings and information submitted by the Contractor.

INSTALLATION & COMMISSIONING:

- a) The installation shall be done by the contractor, who is responsible for its performance and direction of installation & ensures structural stability. The contractor shall conduct a detailed site assessment. The PV installer shall obtain data specific to the site, rather than relying on general data. While making foundation design, due consideration shall be given to weight of the module assembly, maximum wind speed at the site etc.
- b) The SPV panel shall be mounted facing south where being used for optimum performance.
- c) The array structure shall be made of hot dipped GI coated MS/aluminium (I/H Beam/C channels/angle irons & square tubes) frames (70 Micron galvanizing thickness, conform to relevant ISMC) having sufficient strength and suitable size to mount/support all the PV panels/ accessories/ equipments required for the plant and suitable to withstand wind gusts upto 200 km/hr. The minimum thickness of the GI coated MS frames should not be less than 3mm.
- d) The supporting structure should incorporate only corrosion resistant hard wares for all external connections.

- e) Sufficient ventilation/space should be provided at the time of PCU installation and as per the instruction manual of the item.
- f) Laying of cable/ earth strip through wall/floor by providing SS saddles/clamps at a distance of 400mm and inter connection should be provided as per drawing, IEA & CEA regulation.
- g) Giving connection, testing and commissioning of cable as per IEA.
- h) Installation of the maintenance free earth electrode after drilling/digging pit, refilling, providing earth pit chamber with bricks/RCC, cover etc. is also to the contractor's scope.
- i) Installation of earthing and lightning protection as per IEA.
- j) Water pipeline: The array yard should have permanent water line system for cleaning the entire module. The cleaning system involves valve and heavy duty rubber hose. All pipes to be used in the system should be of heavy duty PVC.
- k) All materials required for successful completion of the work are under the scope of contractor.

INSPECTION AND TESTING:

- a) The contractor shall bear all costs of any and all inspections and tests.
- b) In case any equipment fails in inspection/tests or the test reports are not satisfactory, CSL shall reject or demand rectification/re-inspection. Re-inspection/retest shall be carried out only after necessary rectification work/replacement by the Contractor.
- c) On completion of the work all materials and temporary structure of any sort or kind used for the purpose or connected with the erection/installation work shall be removed by the contractor and all pits and excavations to be filled up and handover the site in a tidy and workmanlike condition.

TRAINING:

- a) The Contractor shall arrange training for CSL persons about working procedures and systems covering working norms and quality standards.
- b) The Contractor shall supply all training manuals, instructions and other connected literature in 3 copies to CSL in English language along with the detailed training program.

COMPLETION CERTIFICATE AND APPROVALS:

Necessary approval from Electrical Inspectorate/ CEA/ KSEBL has to be obtained after completing the work. The required documents shall be submitted to CSL for forwarding the same to CEA, Chennai. Any modifications suggested by CEA during their inspection shall be done by the contractor. No additional payment will be given in this regard.

WARRANTY:

The contractor has to provide 5 years comprehensive warranty for the 70 kWp solar power plant.

- a) PV Modules used in solar power plants/system must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80 % at the end of 25 years. In case of any deviation observed during operations from the performance guarantee parameters cited, the contractor shall be informed in writing by CSL. The contractor shall be responsible to rectify the same within 5 days of notification without any extra cost to CSL.
- b) The Power Conditioning Units (PCU), whole part of mounting structures, data logging system, electrical cables, junction boxes, AC & DC distribution boards, bidirectional & unidirectional energy meters, water sprinkler system, circuit breakers, switchgear etc. and all materials included in the solar power plant/systems must be warranted against any manufacturing/design/installation defects for a minimum period of 5 years. In case of any deviation observed during operations from the warranty cited, the contractor shall be responsible to rectify the same within 5 days of notification without any extra cost to CSL.
- c) The systems offered shall be warranted (including consumables) by the manufacturer for use and services for a period of 5 years from the date of commissioning and solar modules shall have warranty for minimum 25 years. Free replacement warranty should be provided on spare parts against manufacturing defects for 5 years.
- d) The respond time to commence the rectification work shall be within 24 Hours on receipt of intimation either by telephone/e-mail/letter.
- e) If the contractor does not commence the rectification either by repair or replacement/does not complete the said rectification of such defects within the stipulated time from the date of notice, CSL may, at his option, rectify the defects at the contractor's expense and the entire expenditure to that will be realized from the security deposit.
- f) All repaired/replaced parts/equipments shall be subjected to inspection & tests as per approved quality assurance plan and inspection & test procedure mentioned elsewhere in the contract.

The contractor should provide direct warranty certificates from the manufacturer/agency, those materials used in the solar power plants.

MAINTENANCE DURING WARRANTY PERIOD:

After successful commissioning of the solar power plant contractor must done the following maintenance works once in 15 days.

- a) Cleaning of the SPV module, inverters and all electrical equipments.
- b) Tightening of the connections & structure bolts.
- c) Checking of all equipments/materials of the entire system.

The entire work should be done to the full satisfaction of the engineer in charge deputed for this work from CSL.


SUB-CONTRACTS:

The contractor shall not sub-contract the work in whole to third parties for the performance of this contract. The contractor may sub-contract a portion of the contract work to third parties with the prior written approval of the CSL. In this respect the contractor shall follow the recommended suppliers list of the CSL, forming part of the Technical Specification.

REJECTION OF DEFECTIVE PLANT:

If the completed plant, or any portion thereof, before final take over, is found to be defective or fails to fulfill the requirements of the contract, CSL shall give the contractor notice setting forth particular of such defects or failure and the contractor shall forthwith make the defective plant good, or alter the same to make it comply with the requirements of the contract. Should he fail to do so within a period of time as deemed reasonable by CSL and stated in the said notice, CSL may reject and replace at the risk and cost of the contractor, the whole or any portion of the plant, as the case may be, which is defective or fails to fulfill the requirements of the contract. However, such rejection/replacement by the CSL shall not absolve the contractor of any of his responsibilities under this contract.

For Cochin Shipyard Limited


सैफुदीन ए एस/SAIFUDEEN A S
वरिष्ठ प्रबन्धक/ Senior Manager
कोचीन शिपयार्ड लिमिटेड
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