



**KARNATAKA STATE MANGO DEVELOPMENT AND MARKETING
CORPORATION (Ltd.,)**

Cauvery Bhavan, Bengaluru-09

Telephone: 080-22236837, e-mail: ksmdmc@gmail.com

INVITATION OF TENDER

FOR

**DESIGN, SUPPLY, INSTALLATION, TESTING,
COMMISSIONING, SYNCHRONIZATION TO GRID,
STAIRCASE, PRESSURE PUMP WITH PIPING AND FIVE
YEARS COMPREHENSIVE ANNUAL MAINTENANCE
CONTRACT FROM 6TH TO 10TH YEAR FOR 72 kWp GRID
CONNECTED ROOFTOP SOLAR POWER PLANT AT
MANGO DEVELOPMENT CENTRE, MADIKERE,
CHINTAMANI.**

SEPTEMBER -2021

NO: KSMD&MCL/DD/MDC/M/ADH-1/02/2021-22, Date: 08.09.2021

Name and address of the entity seeking proposal:

Deputy Director,
Mango Development Centre.
Madikere, Chintamani taluk, Chikkaballapura
District. e-mail: ddmdcchintamani@gmail.com



<u>Time Schedule for the bids:</u>	
Date of commencement of downloading of tender document from https://eproc.karnataka.gov.in	: 08.09.2021 at 14.00PM onwards
Last date for seeking clarification if any through e-mail	: 27.09.2021 Up to 04.00PM
Pre-bid meeting	: 15.09.2021 at 11.00AM
Last date for downloading of bid document +(Corrigendum) from the E-procurement platform: https://eproc.karnataka.gov.in	: 24.09.2021 Up to 04.00PM
Last date and time for bid submission/uploading of bid in E-procurement platform	: 29.09.2021 Up to 04.00PM
Time and date of opening of Technical bid Time and date of opening of Financial bid (subject to technical bid approval)	: 01.10.2021 at 11.00AM 05.10.2021 at 11.00AM (Tentatively)
Pre-bid meeting Address and Place of opening of bids and address for communication	: Karnataka State Mango Development & Marketing Corporation Ltd.,(KSMD&MCL), Cauvery Bhavan, Bangalore-560 009 Contact: E-mail : ddmdcchintamani@gmail.com
Validity period of the tender	: 12 Months
Estimated Tender value (Rs in lakhs)	: Rs 45.00 lakhs

Note: (1) In the event of the specified date of opening of bids being declared a holiday for the Purchaser, the bids shall be opened on the next working day at the same time and venue.

(2) Completed bids shall be uploaded on the e-procurement platform by the Bidders using their user ID and addressed to the Managing Director in the manner described under Instructions to Tenderers **Part II Section I** of Bid Documents on or before the stipulated last date& time.

**Deputy Director of Horticulture
Mango Development Centre.
Madikere, Chintamanitaluk,**

TABLE OF CONTENTS

SL. NO	SECTION	HEADING
1	PART 1	PARTICULARS OF THE TENDER
2	PART 2	INSTRUCTION TO THE BIDDERS
3	SECTION 1	INTRODUCTION
4	1.1	Bidders
5	1.3	Eligible Bidders
6	SECTION 2	THE TENDER DOCUMENT
7	2.1	Content of Tender Document
8	2.2	Information required with the proposal
9	2.3	Amendment in tender document
10	SECTION 3	PREPARATION OF TENDER
11	3.1	Language of tender
12	3.2	Earnest money deposit
13	3.3	Period of validity of tender
14	3.4	Formats and signing of tender
15	3.5	Price and currencies
16	3.6	Local conditions
17	SECTION 4	SUBMISSION, RECEIPT & OPENING OF TENDER BID
18	SECTION 5	TENDER EVALUATION
19	5.1	Technical evaluation criteria
20	5.2	Financial evaluation criteria
21	5.3	Clarification regarding the submitted tender
22	SECTION 6	AWARD OF CONTRACT
23	6.1	Technical and Financial specification
24	6.2	Notification of award
25	6.3	Award of work contract
26	6.4	Right to accept/reject all or any tenders
27	6.5	General
28	PART 3	GENERAL CONDITIONS OF CONTRACT
29	3.1	Definitions
30	3.2	Completion period
31	3.3	Liquidated damages
32	3.4	Force majeure
33	3.5	Quality & Warrantee
34	3.6	Standards
35	3.7	Inspection and tests
36	3.8	Transportation

37	3.9	Demurrage wharfageetc
38	3.10	Insurance
39	3.11	Liability for accidents and damages
40	3.12	Duties and taxes
41	3.13	Patent right and royalties
42	3.14	Right to vary quantities
43	3.15	Termination for default
44	3.16	Termination for insolvency
45	3.17	Completion of work
46	3.18	Other conditions
47	3.19	Statutory acts
48	3.20	Applicable law
49	3.21	Notices
50	3.22	Application
51	3.23	Payment terms and conditions
52	3.24	Payment terms for MGIRED consultancy fee
53	3.25	Module mounting structure
54	3.26	DC Distribution board (DCDB)
55	3.27	Test reports
56	3.28	Warranty
57	3.29	Operation manual
58	3.30	confidentiality
59	SECTION 7	SPECIALCONDITIONS OF CONTRACT
60	7.1	Definitions (GCC Clause 1)
61	PART 4	DETAILS OF THE SCOPE OF WORK
62	4.1	General Technical Specifications and Scope of Work
63	4.2	Schedule of Requirements
64	4.3	Technical Specifications
65	4.4	Drawings & Manuals
66	4.5	Planning and Designing
67	4.6	Drawings to be furnished by Bidder after award of contract
68	PART 5	TECHNICAL BID
69	5.1	Solar modules
70	5.2	Items/Component
71	5.3	Civil structure details if any
72	5.4	Electrical installation details with modules, plans etc.,
73	5.5	Any other relevant information
74	5.6	Details of executed projects
75	5.7	Please fill in information about Grid connected Solar PV Systems installed in last three years
76	5.8	Details of Sale/Service Centers in Karnataka/other state



77	PART 6	FINANCIAL BID
78	6.1	Certified that:
79	PART 7	LIST OF DOCUMENT TO BE SUBMITTED
80	7.1	Certified true copy of:
81	7.2	Certified true copy of: Bidder shall provide the following details as a part of its technical proposal
82	7.3	Details regarding bidders
83	7.4	Litigation history
84	PART 8	DISCLAIMER

Abbreviations

AC	Alternative Current
CEA	Clean Energy Associates
DC	Direct Current
DCDB	Direct Current Distribution Box
EPC	Engineering Procurement and Commissioning
IE	Indian Electricity
IEC	International Electro Technical Commission
ISO	International Organization for Standardizations
kW	Kilo Watt
kWh	Kilo Watt Hour
LOI	Letter Of Intend
MCB	Miniature Circuit Breaker
MNRE	Ministry of New and Renewable Energy
PPA	Power Purchase Agreement
RFP	Request For Proposal
RTSPVS	Rooftop Solar Photovoltaic System
SPD	Surge Protection Device
LOA	Letter of Allotment
CAMC	Comprehensive Annual Maintenance Contract
MCCB	Moulded Case Circuit Breaker

PART-1
PARTICULARS OF THE TENDER

1)	Name of the tender	Design, Supply, Installation, Testing, Commissioning, Synchronization to grid, staircase, pressure pump with piping and five years comprehensive annual Maintenance contract from 6 th to 10 th year for grid connected 72 kWp Solar On-Grid Rooftop Power Plant at Deputy Director of Horticulture. Mango post Harvest handling centre. Madikere cross, Chinthamani-563125
2)	Tentative quantity	Grid connected 72 kWp Solar On-Grid Rooftop Power Plant on the roof of Mango post Harvest handling centre, Madikere cross, Chinthamani-563125
3)	Period of contract	Execution of works shall be completed within 12 Weeks from the date of award of tender/work order.
4)	Validity of Letter of Allotment (LOA)	2 weeks from the date of issue of LOA

Note:-

The bid document is available online and bids are to be submitted online through the e-procurement <https://eproc.karnataka.gov.in> only. Bids submitted in any other manner will not be accepted. Bidders are required to obtain level III digital signature from designated firms (available on e-proc. portal and then register with the Government of Karnataka e-procurement platform and submit bids by using their user ID and Digital Signature).



PART-2 INSTRUCTIONS TO BIDDERS

SECTION 1 INTRODUCTION

- 1.1 **BIDDERS:** The Bidders may be an individual/ firm/ company or form a consortium ora joint venture to achieve the expertise, skill and resources, which will be required. The Proposal has to clearly outline the legal set-up, the ownership structure of the Bidders. Further, if the bidder is a consortium, the proposal shall spell out the ownership structure as well as the decision mechanisms within the consortium and submit the same as a part of its proposal. The proposal shall also include the full details of the consortium/ Joint Venture Company along with its financial statement. The Proposal has to indicate the financial and personnel contribution of each of the consortium partners. The Proposal has to include a binding commitment of the authorized persons of each consortium partner for the proposed consortium and for the Proposal itself. Any change in composition of the Bidder (including if the Bidder is a Consortium/joint venture) subsequent to the submission of Proposal shall be permitted only byDeputy Director of Horticulture,Mangopost Harvest handling centre. Madikere cross, Chinthamaniprior written consent. The members of the consortium/ Joint Venture Company shall nominate and authorize member to represent each such member of the Consortium/joint venture company in this tender process subsequent to the submission of the Proposal and until the execution of the Agreement.
- 1.2 The Proposal shall be signed by the duly authorized signatory of the bidder or each member of the Consortium/joint venture company, and shall be legally binding on bidder/all the members of the Consortium. Each member of the Consortium/joint venture company shall be jointly and severally liable for the design, establishment and operation of the solar power plant in accordance with the terms of the power purchase agreement.
- 1.3 **ELIGIBLE BIDDERS**
The Bidder shall provide sufficient documentary evidences to satisfy the following conditions.

Pre-Qualification criteria:

- a) **Technical:** Bidder should have executed/ installed/completeda single solar power plant of at least100kWpcapacity of On Grid Roof top Solar Power plant in India or more of solar power during the last three financial years. Valid proof for such as completion certificates with technical details shall be submitted along with the pre-qualification on the client letter head only.
- b) Block listed Bidders are not allowed to bid the tender.

c) **Financial:** Audited annual turnover of the Bidder shall not be less than Four crore and should be at least Rupees Two Crore in Solar PV projects in any one of the last three financial years. The bidder shall provide the audited balance sheet for the past three years. The bidder should be a profit making entity.

The documents related to pre-qualification should be submitted and all the part documents mentioned in the part-7 shall be uploaded in the e-procurement portal.

Mango post Harvest handling centre, Madikere cross, Chinthamani intends to select only serious Bidders for entering into an Agreement with Mango Post Harvest Handling Centre, Madikere cross, Chinthamani. Accordingly, the Bidders shall ensure that, sufficient information is provided to enable Mango post Harvest Handling Centre, Madikere cross, Chinthamani to make judgments about their suitability and in assessing the Proposals submitted. The Bidders are requested to upload Pre-Qualification, Technical and Financial Proposal on or before the Due Date.

- 1.4 The Bidder fulfilling the terms and conditions of eligibility for and shall have the relevant experience for undertaking the works mentioned in the scope of work.
- 1.5 Has adequate plant, machinery, resources, skilled & unskilled employees, and manufacturing capacity, to perform the works properly and expeditiously within the time frame specified in the tender document.
- 1.6 Has established quality assurance systems and organization designed to achieve high level of equipment reliability in manufacturing of the Solar PV Power Plant.
- 1.7 Has adequate financial and Technical specification to meet the financial obligations as well as technical specifications pursuant to the scope of work.
- 1.8 Has adequate field service setup to provide good maintenance services for the works mentioned in the tender.
- 1.9 Has Valid Test Reports for installation, operation, maintenance etc for the works as specified in the tender.



SECTION 2

THE TENDER DOCUMENT

2.1 CONTENT OF TENDER DOCUMENT

- 2.1.1 The tender procedure and contract terms are prescribed in the tender document.
- 2.1.2 The Bidder is expected to examine all instructions, terms and conditions, specifications, forms and formats etc as mentioned/ enclosed in the tender document. Failure to furnish all information required in the tender document or submission of a tender not substantially responsive to the tender document in every respect will be at the bidder's risk and is likely to result in out-right rejection of the tender.

2.2 INFORMATION REQUIRED WITH THE PROPOSAL

- 2.2.1 The bidder must clearly indicate the name of the tender, may also include details of specifications and other comprehensive descriptive materials in support of technical specifications required for the execution, also contain the technical details of the structure.
- 2.2.2 The above information may be provided by the bidder in the form of soft copies.
- 2.2.3 Any tender not containing sufficient descriptive material to describe the proposed equipment may be treated as incomplete and hence may be rejected. Such descriptive materials and specifications submitted by the bidder will be retained by Mangopost Harvest handling centre, Madikere cross, Chinthamani. Any deviations from these will not be permitted during the execution of contract, without specific written permission of Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani.

2.3 AMENDMENTS IN TENDER DOCUMENT

- 2.3.1 At any time prior to the deadline for submission of tenders, the purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by amendment or addendum. The addendum will appear on the web page of the website <https://eproc.karnataka.gov.in> and no communication would be sent. Any addendum issued shall be part of the tender document and shall be



notified as addendum / corrigendum in the e-procurement portal which shall be binding on all prospective bidders.

- 2.3.2 All prospective bidder/s who have downloaded the tender documents will not be notified of the amendments in writing or by fax, email etc., and will be binding on them.
- 2.3.3 In order to allow prospective bidder/s reasonable time in which to take the amendment into account in preparing their bids, purchaser at his discretion, may extend the deadline for the submission of bids.



SECTION 3

PREPARATION OF TENDER

3.1 LANGUAGE OF TENDER

The tender prepared by the bidder, as well as all correspondence and documents relating to the tender exchanged by the bidder and the Purchaser, shall be written in English language, supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Tender, the translation shall govern.

3.2 EARNEST MONEY DEPOSIT

3.2.1 EMD is exempted.

3.3 PERIOD OF VALIDITY OF TENDER

3.3.1 The tender is valid for a period of 12 Months.

3.3.2 Validity of the offer submitted by the bidder should be for 90 days beyond the validity of tender. Bids without this validity will be rejected.

3.3.3 Any deviation in the validity of tender is the discretion of tendering authority.

3.4 FORMATS AND SIGNING OF TENDER

3.4.1 The tender must contain the name and places of business of the firm/person/persons participating in the tender and must be signed and sealed by the bidder with his usual signature. The name and designation of all persons signing the tender document should be written below every signature. Tender by a partnership firm/JV/consortium must be furnished with full name of all partners with a copy of partnership deed or by the authorized signatory. All the previous relevant projects should have been executed in the name of firm/ JV /consortium, whose value of turnover (Overall/ PV Projects) will be considered for evaluation. Bidding consortium/JV should be in existence from atleast past 5 years.

3.4.2 The original copy of the tender should be typed and must be signed with the legal name of the corporation/ company by the President/ Managing Director/ Secretary of the firm or a person duly authorized to bid. In case of authorized person, the letter of authorization by written power-of-attorney should be enclosed with the technical bid of the tender. The person or persons signing the tender shall initial all pages of the tender document.

3.4.3 The tender shall contain no interlink actions, erasers or overwriting except as necessary to correct the errors made by the tenderer in the preparation of tender document. The person or persons signing the tender shall also sign at all such corrections.

3.5 PRICE AND CURRENCIES

The bidder shall submit his/its rates in Indian Rupees only, on the format for Financial Bid attached to this tender document. The rates should include all applicable taxes, duties & surcharges.

3.6 LOCAL CONDITIONS

3.6.1 The bidders are suggested to collect all relevant data regarding the proposed place of work/ site, its local environment, approach road and connectivity, actual prevailing working conditions, availability of required materials, labour and all other information/ data required for proper completion of the proposed work. The bidder must visit the site before submitting his tender. **Tenderers shall not entertain any request of bidder for clarifications related to such local conditions and shall bear no responsibility in this regard.**

3.6.2 It will be imperative on bidder to have full information of all local conditions and factors which may have any effect on the execution of the works. The bidder shall be deemed to have collected all the relevant information regarding the proposed roof, place of works/ site, its local environment, approach road and connectivity etc. and be well acquainted with actual working and other prevailing conditions.

3.6.3 The bidder should visit the site before starting the work. **Tenderer shall not entertain any request of bidder for clarifications related to such local conditions and shall bear no responsibility in this regard.**

3.6.4 The Bidders may seek clarifications in writing, through a letter or by fax (and also soft copy by e-mail) to reach the Mango post Harvest handling centre. Madikere cross, Chinthamani at the address, date and time mentioned in the RFP. The purpose of the pre-bid meeting will be to clarify any issues regarding the RFP or with respect to bring more clarity to the scope of work of the bidder or including any particular, issues raised in writing by the Bidders. It is further advised that the successful bidder shall inspect the existing electrical installation, MCCB, LT/HT panel, substation including metering system; CT&PT's, Diesel Generator, transformer capacity etc., installed at the Mango post Harvest handling centre. Madikere cross, Chinthamani and satisfy by itself with the condition of the same. In the event of any suggestion to improve with respect to the above shall form part of its technical proposal.

- 3.6.5 The pre-bid meeting shall be organized at the Office of Managing Director, Karnataka State Mango Development & Marketing Corporation Ltd., (KSMD&MCL), Cauvery Bhavan, Bangalore-560 009.**
- 3.6.6 All the interested bidders can put down their queries regarding bid document. The bidders must visit the Mango development centre, Madikere, Chintamani before attending the pre bid meeting. Each bidder will be given ten minutes to clarify their queries in the pre bid meeting. No queries will be entertained after the allotment of workorder.
- 3.6.7 All the interested bidders shall, make a technical presentation to tenderer in English language, with respect to the technology used or offered or proposed for the project at Mango post Harvest handling centre, Madikere cross, Chinthamani premises and a soft copy in CD shall be shared to the tenderer. The technical presentation shall cover all areas such as details of components, design/SLD, execution & synchronization of the system to the grid, staircases, liasoning and BESCO approvals, timeline of execution, scope of maintenance etc., and shall not last more than fifteen minutes. The time and venue of such presentation will be communicated by the tenderer to each bidder separately. All the cost associated in connection with the preparation, presentation, travel or any direct or indirect expenses shall be borne by the bidders and at any point of time tenderer will not be responsible for the same. The successful bidder shall offer the same technology or any upgraded version of the same to tenderer.

SECTION 4

SUBMISSION, RECEIPT AND OPENING OF TENDER BID

- 4.1 Entirely through e- procurement process.
- 4.2 Bids submitted through any other media other than e- procurement portal is not entertained.
- 4.3 The Purchaser / Tenderer will open all tenders on a specified date and time. Further, the bids will be evaluated in the presence of tender evaluation committee.
- 4.4 The tender evaluation committee will prepare minutes of meeting of technical and financial bid.
- 4.5 Any queries regarding bid submission should come through proper channel, else it will be considered as corrupting practice.

SECTION 5

TENDER EVALUATION

5.1 Technical evaluation criteria:

- 5.1.1 The technical proposals of only those prequalified Bidders will be opened for technical evaluation.
- 5.1.2 To qualify in the technical evaluation stage, Bidders must obtain a minimum 70% of allotted marks.
- 5.1.3 The technical proposal shall not include any financial information relating to financial proposal.
- 5.1.4 The Bidder's technical proposal will be evaluated against the requirements mentioned in section 6.1.

5.2 Financial evaluation criteria:

- 5.2.1 Financial proposal of only those Bidders who have been technically qualified with a minimum 70% of allotted marks shall be opened for evaluation.
- 5.2.2 Bidders shall submit their financial bid in the format specified in this document through e-portal.
- 5.2.3 **In the event of any difference between the figures and words, the lowest amount indicated either in words or figures will be considered.**
- 5.2.4 In evaluating the bids, both the technical and financial parameters will be evaluated by the tender evaluation committee.

5.3 CLARIFICATIONS REGARDING THE SUBMITTED TENDERS

During evaluation of tenders, the Purchaser / Tenderer may, at its discretion, ask the bidder for a clarification of his tender. The request for clarification and the response shall be in writing and no change in prices or substance of the tender shall be sought, offered or permitted.

SECTION 6 AWARD OF CONTRACT

6.1 TECHNICAL SPECIFICATION

Sl. No.	Criteria	Proof to be uploaded	Weightage
1	The Bidder should be Manufacturer of PV modules / Inverter or System Integrator or an approved SPV channel partner of MNRE for On- grid Solar RTPV projects.	Proof of necessary document should be uploaded with valid period and capacity allotted.(System integrators should provide copy of work orders and its performance certificates for satisfactory functioning of grid connected Solar PV system)	15%
2	The Bidder should have obtained the valid Class-I Electrical Contractor's Licenses for carrying out the HT works/the valid class-II Electrical Contractor License for carrying out the medium voltage works, issued by the Department of Electrical Inspectorate, Government of Karnataka. In case the Bidder does not have the respective licenses, can appoint a contractor to carry-out the respective electrical works, details of which shall be provided.	Proof of necessary document should be uploaded.	5%
3	The bidder company should be in existence for past 3 years registered under GOI / GOK.	Valid Company incorporation Certificate and GST Certificate should be uploaded.	5%
4	The Bidder should have installed Solar PV plants with total cumulative capacity of 1 MWgrid connected rooftop system. Out of which at-least one system of 100 kWp Rooftop grid connected should be installed & commissioned in past three years from the date of bidding.	Copy of work orders and its performance certificates for satisfactory functioning of grid connected Solar PV system shall be uploaded.	25%

5	The Bidder should have PF, ESI, Service tax, Sales tax, Labour License issued by competent authority.	Proof of necessary document should be uploaded.	5%
6	Man Power(No. of skilled man power with their resume or employment details)	Proof for necessary documents should be uploaded.	5%
7	The Annual turnover of the Bidder or consortium shall not be less than four crore in any one of the last three financial years (i.e, from 2017-18, 2018-2019 & 2019-2020). Refer 3.4.1	Annual Report for the three audited years (2017-18, 2018-2019 & 2019-2020) to be uploaded consisting of a) Balance Sheet b) Profit & Loss accounts	15%
8	The Annual turnover of the Bidder or consortium shall not be less than two crores exclusively in solar PV projects in any one of the last three financial years (i.e, from 2017-18, 2018-2019 & 2019-2020). Refer 3.4.1	Annual Report for the three audited years 2017-18, 2018-2019 & 2019-2020) to be uploaded consisting of a) Balance Sheet b) Profit & Loss accounts	15%
9	Liquid assets as on date of tender, consisting of cash in hand plus cash at bank plus term deposits plus availability of fund based credit facility in any scheduled bank shall not be less than 25% of amount put to tender.	Availability of Liquid assets shall be supported by certificate issued by a Chartered Accountant and as regards, fund based credit facility, and certificate from any Scheduled Commercial Bank shall to be uploaded.	10%

6.2 NOTIFICATION OF AWARD

Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani will notify the successful bidder by registered Letter/Email/Fax that his tender has been accepted.

6.3 AWARD OF WORK CONTRACT

6.3.1 Prior to the award of work contract an agreement shall be signed between **Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani** and the lowest successful bidder. A bank guarantee of 3% of the quoted amount by the lowest successful bidder has to be given by the bidder to **Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani**, prior to the award

of work contract. The bank guarantee has to be submitted before the LOA duration.

6.3.2 Additional Performance Security :If there exists difference amount in the quoted value and the estimated value i.e., Unbalanced tender, 50% of the difference amount has to be given by the lowest successful bidder in the form of Bank guarantee before the award of work contract and in further its left to the discretion of the tenderer.This additional performance security will be released only after the successful completion of SRTPV to grid.

6.3.2 Contract should ordinarily be awarded to the lowest evaluated bidder whose bid has been found to be responsive and who is eligible and qualified to perform the contract satisfactorily as per the terms and conditions incorporated in the corresponding bidding document.

6.3.3 If Letter of Allotment is not accepted by the lowest bidder, the tenderer has every right to allot the work to next lowest bidder only if he agrees to carry out the work quoted by first lowest bidder.

6.4 RIGHT TO ACCEPT/REJECT ANY OR ALL TENDERS.

Deputy Director of Horticulture, Mangopost Harvest handling centre. Madikere cross, Chinthamanireserves all the rights to reject any or all the tenders, accept any tender in total or in part.

6.5 GENERAL

6.5.1 The successful bidder shall pay all the expenses of stamp duties and other requirements for signing the agreement with Mango post Harvest handling centre. Madikere cross, Chinthamani. Each bidder shall be solely responsible for its own legal, accounting, consulting preparation & submission of the proposal and all or any other professional fees and expenses incurred in connection with this RFP.

6.5.2 The successful bidder has to provide a complete system warranty of 5 years from the date of synchronization and any unintentional operational damages to the solar panel, inverter, module mounting structure and BOS within the above said duration has to be replaced and any cost incurred has to be borne by the successful bidder.

6.5.3 The successful bidder shall agree for comprehensive annual maintenance contract of the SRTPV plant from 6th to 10th year. Any unintentional operational damages to the solar panel, inverter, module mounting structure and BOS within the above said CAMC duration has to be replaced and any cost incurred has to be borne by the successful bidder. Bidder has to take above mentioned words into account while preparing their respective financial proposal.

- 6.5.4 State of the art plant efficiency monitoring and data logging system will be an integral part of the solar power plant. Mango post Harvest handling centre, Madikere cross, Chinthamani should be able to diagnostic & monitor all plant efficiency related parameters.
- 6.5.5 Bidder will submit technical details like PV technology used, panel make, inverter make & associated electrical panels & Transformers make, Bi-directional meter, check meter, generation report, structural drawing for mounting solar panels etc. along with the bill of material, commercial and payment details. The Solar Panel shall be non-reflective type. The bidder shall submit certificate for solar panel, inverter, etc from IEC or equivalent at the time of PPA signing and cabling shall be as per the IE Rules and shall comply with all electricity safety norms during the installation phase in the maintenance & operation phase.
- 6.5.6 Any damage caused to the asset of Mango post Harvest handling centre. Madikere cross, Chinthamaniduring the construction activities of the plant thereof will be the responsibility of the bidder and it will be required to fix the damage as per the specification ofMango post Harvest handling centre. Madikere cross, Chinthamanior compensate an equivalent amount. It is the responsibility of the bidder to acquit himself with the existing policies of Mango post Harvest handling centre. Madikere cross, Chinthamani.
- 6.5.7 Bidder shall not claim any current or future green benefits on solar energy supplied toMango post Harvest handling centre. Madikere cross, Chinthamani. These benefits include Carbon credits, RECs or any benefits that would be available in the future.
- 6.5.8 The successful bidder shall provide training to the nominated employees of Mangopost Harvest handling centre. Madikere cross, Chinthamaniwith respect to the operation and maintenance of the solar power plant installed at Mango post Harvest handling centre. Madikere cross, Chinthamanibuilding without any additional cost to Mango post Harvest handling centre. Madikere cross, Chinthamani. The training shall include the day to day maintenance of the solar power plant and its operation. The training has to be provided for cleaning of solar panels at least once in a month for three months. The detailed training schedule will be discussed and finalized with the successful bidder.
- 6.5.9 The 72 kWp grid connected solar power plant has to be installed at Mango post Harvest handling centre. Madikere cross, Chinthamani 563125 with google coordinates of latitude and longitude of 13.38496 N and 78.082 E.

PART 3

GENERAL CONDITIONS OF CONTRACT

3.1 DEFINITIONS

In the deed of contract unless the context otherwise requires: -

- 3.1.1 The contract shall be for **Design, Supply, Installation, Testing & Commissioning, Synchronization to grid, staircase and five years comprehensive annual maintenance contract from 6th to 10th year of the grid connected 72 kW Solar On-Grid Rooftop Power Plant on Mango post Harvest handling centre, Madikere cross, Chinthamani. The plant capacity can be increased/decreased at the same pricing factor (per kWp) quoted by the lowest successful bidder if the Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani decides to extend the plant capacity.**
- 3.1.2 However the validity of rates may further be extended to a specified period of time and/or to other locations if Mango post Harvest handling centre, Madikere cross, Chinthamani decides to extend on the mutual consent of both the parties.
- 3.1.3 The bidder shall be deemed to have carefully examined all the papers, drawings etc. attach to the contract deed. If he shall have any doubt as the meaning of any portion or any condition(s) / specifications etc.

3.2 COMPLETION PERIOD

- 3.2.1 The total work assigned to the successful bidder shall have to be completed by him within 12 weeks from the date of award of contract. The work shall have to be completed within time and shall be binding on the successful bidder.
- 3.2.2 In exceptional circumstances, bidder may solicit the consent of the tenderer to an extension of work completion period. The request and the response there of shall be made in writing. The acceptance / rejection of request given by the bidder is a discretion of tenderer and subjected to valid grounds. The genuine reasons for extension and extension period for number of days / weeks is evaluated and decided by the tendering authority. The bidder after getting permission to the request is not permitted to modify his/its proposal, but shall be required to extend the validity of his/its proposal correspondingly. All the terms of the bidding shall continue to be applicable during the extended period of validity. The rate quoted by the bidder shall be fixed for the duration of the contract or for any extended contract term and shall not be subject to adjustment on any account whatsoever.
- 3.2.3 In case the successful bidder fails to execute the said work or related

obligations within stipulated time (Original work completion period plus extension if any), Mango post Harvest handling centre, Madikere cross, Chinthamani will be at liberty to get the work executed from the open market at the risk and cost of the successful bidder, without calling any tender and without any notice to the successful bidder. Any additional cost incurred by Mango post Harvest handling centre, Madikere cross, Chinthamani during such execution of the work shall be recovered from the successful bidder.

- 3.2.4 The calculation of aforesaid 'additional cost' will be finalized by the Mango post Harvest handling centre, Madikere cross, Chinthamani at its sole discretion. The successful bidder shall have no right to challenge the mode or amount relating to calculation at any forum. For completion of the work through any other agency, in case some changes are required in terms and conditions of the contract; the successful bidder shall not have any right to challenge the decision of Mango post Harvest handling centre, Madikere cross, Chinthamani.

3.3 LIQUIDATED DAMAGES

If the successful bidder fails to perform the work within the time periods specified in the work orders or within the extended time period if any, Mango post Harvest handling centre, Madikere cross, Chinthamani shall without prejudice to its other remedies under the contract, deduct from the contract price/or any payments payable to the successful bidder as liquidated damage, a sum equivalent to 2.5% of the price of the unperformed work / services for each week of delay until actual completion of work, up to a maximum deduction of 10%. Once the maximum is reached, Mango post Harvest handling centre, Madikere cross, Chinthamani may consider termination of the contract.

3.4 FORCE MAJEURE

- 3.4.1 Notwithstanding the provisions of clauses contained in this document; the successful bidder shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfil his obligation under this deed due to force majeure circumstances.
- 3.4.2 For purpose of this clause, "Force majeure" means an event beyond the control of the successful bidder and not involving the successful bidder's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by the Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross,



Chinthamani & his decision shall be final and binding on the successful bidder and all other concerned.

3.4.3 If a force majeure situation arises, the successful bidder shall notify Mango post Harvest handling centre, Madikere cross, Chinthamani writing promptly (at the most within 10 days from the date such situation arises). After examining the cases Mango post Harvest handling centre, Madikere cross, Chinthamani shall decide and grant suitable addition time for the completion of the work.

3.4.4 For other justified cases also, not covered under force majeure conditions, Mango post Harvest handling centre, Madikere cross, Chinthamani may consider the request of successful bidder and additional time for completion of work may be granted.

3.5 QUALITY AND WARRANTY

3.5.1 The successful bidder shall warrant the Design, Supply, Installation, Testing & Commissioning, Synchronization to Grid, of grid connected 72 kW Solar Rooftop Plant and for all related works as per applicable standards of quality. Anything to be furnished shall be new, free from all defects and faults in material and workmanship. The manufacture shall be in accordance with the specified technical parameters and should be of the highest grade and consistent with established and generally accepted standards for material. It shall be in full conformity with the drawing or samples if any and shall operate properly if operable.

3.5.2 After erection of the Power Plant at site, the successful bidder shall ensure satisfactory performance of the equipment for a period of time as specified in the scope of work.

3.5.3 The successful bidder shall rectify defects developed in the Systems within Warranty period promptly.

3.5.4 The successful bidder shall give the warranty for the complete project for a period of 5 years from the date of synchronizing to grid.

3.6 STANDARDS

The goods supplied and works executed under this contract shall conform to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of International Electrotechnical Commission or Indian Standard Institution or Bureau of Indian Specification shall be applicable.

3.7 INSPECTION AND TESTS

- 3.7.1 Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanior its duly authorized representatives shall have the right to inspect and /or to test the goods to confirm their quality according to the contract and shall have access to the successful bidder's works premises and the power to inspect and examine the materials and workmanship of the Solar PV Power Plant at all reasonable times.
- 3.7.2 The successful bidder shall inform Deputy Director of HorticultureMango post Harvest handling centre, Madikere cross, Chinthamani through a written notice regarding any material being ready for testing at least 7 days in advance. The conditions of contract and/or the technical specifications shall specify what inspections and tests shall be examined byDeputy Director of HorticultureMango post Harvest handling centre, Madikere cross, Chinthamani. All the arrangements of necessary equipment and expenses for such tests shall be on the successful bidder's account excluding the expenses of the inspector.
- 3.7.3 Deputy Director of HorticultureMango post Harvest handling centre, Madikere cross and Chinthamani/chikkaballapur Inspector, unless the witnessing of the tests is waived off, will inspect and attend such test within 7 days from the date on which the equipment are notified as being ready for test /inspection. MNRE or any Government officer may also be present at the time of such testing.
- 3.7.4 Deputy Director of HorticultureMango post Harvest handling centre, Madikere cross, Chinthamani shall within 7 days, give written notice to the successful bidder, about any objection regarding the quality of the system. The successful bidder shall either make the necessary modifications to remove the cause of such objection or shall clarify the objections in writing if modifications are not necessary to comply with the contract.
- 3.7.5 After satisfactory testing of the systems during inspection, Deputy Director of HorticultureMango post Harvest handling centre, Madikere cross, Chinthamani/chikkaballapur's Inspector shall issue dispatch clearance for the supply of material at site.
- 3.7.6 The inspection by Deputy Director of Horticulture,Mango post Harvest handling centre, Madikere cross, Chinthamani and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the successful bidder in respect of the agreed and

specified quality. Nothing in GCC clause 8 shall in any way relieve the successful bidder from any Warranty or other obligations under this contract.

3.7.7 In case any time the system is not found in accordance with the required technical specifications, the work order(s) shall be cancelled and all the payments made by Deputy Director of Horticulture Mangopost Harvest handling centre, Madikere cross, Chinthamani to the successful bidder shall be recovered. Such contractor shall also be blacklisted from participating in any tender in Deputy Director of Horticulture Mango post Harvest handling centre, Madikere cross, Chinthamani in future.

3.8 TRANSPORTATION

The successful bidder is required to deliver the goods at (Name of the Place) as defined in the scope of work.

3.9 DEMURRAGE WHARFAGE, ETC

All demurrage, wharfage and other expenses incurred due to delayed clearance of the material or any other reason shall be on the account of the successful bidder.

3.10 INSURANCE

3.10.1 The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition; transportation and the expenses shall be borne by the successful bidder.

3.10.2 The successful bidder shall arrange security & storage of their materials to avoid any theft or losses during execution of work Deputy Director of Horticulture Mango post Harvest handling centre, Madikere cross, Chinthamani will, in no case, shall be responsible for providing any security/storage for the materials & equipment lying at site during execution of work. Under the contract successful bidder shall be responsible for any loss or damage until the systems/ supplies are taken over.

3.11 LIABILITY FOR ACCIDENTS AND DAMAGES

During the Warranty period, the successful bidder shall assume all responsibilities for direct damages covering all type of accident, injury or property damage caused by manufacturing defects or faulty erection on the systems.

3.12 DUTIES AND TAXES

The rates/ prices mentioned in the price-schedule include all applicable taxes, duties & surcharges. No additional payments shall be made by Deputy Director of Horticulture Mangopost Harvest handling centre, Madikere cross, Chinthamani on this account.

3.13 PATENT RIGHT AND ROYALTIES

The successful bidder shall indemnify Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani against all third party claims of infringement of patent, royalties, trademark or industrial design rights arising from use of the goods supplied/ erected by the successful bidder or any part thereof.

3.14 RIGHT TO VARY QUANTITIES

Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani reserves all the rights to increase or decrease the quantity of goods mentioned in the contract, at the time of placement of orders, price will be factorized with reference to L1 bidder's value.

3.15 TERMINATION FOR DEFAULT

Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani without prejudice to any other remedy for breach of contract, by written notice of default sent to the successful bidder, may terminate the contract in whole or in part:

3.15.1 If the successful bidder fails to deliver the Services within the allocated time period(s).

3.15.2 If the successful bidder fails to perform any other obligation(s) under the contract. However, in the event of termination of the contract in part, the successful bidder shall continue performance of the contract to the extent not terminated.

3.16 TERMINATION FOR INSOLVENCY

Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani may at any time terminate the contract by giving written notice to the successful bidder without compensation to the successful bidder if he becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani.

3.17 COMPLETION OF WORK

On completion of the work, the successful bidder shall submit 5 sets of "Executed Report" to Deputy Director of Horticulture Mango post Harvest handling centre, Madikere cross, Chinthamani which will include photographs, drawings and as executed reports of various systems containing details of erection from the point of view of future operation & maintenance of the installed systems. This report must also contain all Technical Details, Detailed Circuit Diagram of the Electronic/ Electrical components of all the system and clearance from respective authorities.

3.18 OTHER CONDITIONS

- 3.18.1 **The successful bidder shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani in writing.**
- 3.18.2 Deputy Director of Horticulture / Project Officer Mango post Harvest handling centre, Madikere cross, Chinthamani may at any time either stop the work all together or reduce or cut it down by sending notice in writing to the successful bidder. If the work is stopped all together, the successful bidder will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. The decision of Deputy Director of Horticulture Mangopost Harvest handling centre, Madikere cross, Chinthamani regarding assessment of such expenses shall be final and binding on the successful bidder. If the work is cut down, the successful bidder will not be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work awarded to him.
- 3.18.3 Fulfillment of various requirements, not particularly mentioned in the specifications or drawings but necessary for satisfactory and proper completion of the work shall be the successful bidder's responsibility within the prices offered by him.
- 3.18.4 Work carried out without Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani's approval shall not be accepted and Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani shall have rights to get it removed and to recover the cost so incurred from the successful bidder.
- 3.18.5 The successful bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani.
- 3.18.6 The successful bidder shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.
- 3.18.7 Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani will not be bound by any Power of Attorney granted/ issued by the successful bidder or by any change in the composition of the firm made during or subsequent to the execution



of the contract. However, recognition to such Power of Attorney and change (if any) may be given by Deputy Director of Horticulture , Mango post Harvest handling centre, Madikere cross, Chinthamani after obtaining proper legal advice, the cost of which will be chargeable to the successful bidder concerned.

3.19 STATUTORY ACTS

3.19.1 All legal formalities/clearances are to be obtained by the successful bidder regarding the execution of the said work.

3.19.2 In respect of all labour directly or indirectly employed on the work by the successful bidder, the successful bidder shall comply with all the provisions of hiring the contract labour and rules of State/ Central Government or any other authority framed from time to time. The rules and other statutory obligations in this regard will be deemed to be the part of this contract.

3.19.3 The successful bidder shall comply with the all the Acts & rules and regulations, laws and by-laws framed by State/ Central Government/ organization in whose premises the work has to be done. Mango post Harvest handling centre, Madikere cross, Chinthamani shall have no liabilities in this regard.

3.20 APPLICABLE LAW

The contract/tender shall only be interpreted under Indian laws. The Courts of Bangalore shall have the exclusive jurisdiction in all matters arising under this contract/tender.

3.21 NOTICES

3.21.1 Any notice to be given by one party to the other, pursuant to the contract shall be sent in writing. A notice shall be effective when delivered or from the effective date mentioned in the notice, whichever is later.

3.21.2 Notices, statements and other communications sent by Deputy Director of Horticulture Mango post Harvest handling centre, Madikere cross, Chinthamani to the successful bidder at his specified addresses through registered post/ email/ fax shall be deemed to be delivered to the successful bidder.

3.22 APPLICATION

These general conditions shall apply to the extent that provisions in other parts of the contract do not supersede them.

3.23 PAYMENT TERMS AND CONDITIONS

- 3.23.1 40% payment of Sub Total 1 will be done against the delivery of goods (Solar PV module, inverters, mms, cables). **Note: Prior to the approval of the entire shipment of goods, a 5 kWp solar pv module, mms, cabling sample, civil work and earthing has to be demonstrated in the presence of Deputy director of Horticulture, madikere cross, Chinthamani.**
- 3.23.2 55% payment of Sub Total 1 will be done after the Successful commissioning and synchronization to the grid.
- 3.23.3 Balance 5% payment of subtotal 1 will be paid after the submission of 3 months inspection and evaluation report against the receipt of 5% bank guarantee.
- 3.23.4 Bank guarantee 5% will be released on yearly basis as 1% at the end of each year for a duration of 5 years against the submission of performance report.
- 3.23.5 The tenderer will not pay any interest amount during its period for the bank guarantee submitted by the bidder.
- 3.23.6 The comprehensive annual maintenance contract amount of Sub Total 2 will be paid by the tenderer to the successful bidder on yearly basis from 6th year to 10th year against the submission of performance report.

3.24 PAYMENT TERMS FOR MGIRED CONSULTANCY FEE

- 3.24.1 The bidder should take Rs 1,87,500 plus GST into consideration while calculating the financial bid of the entire project, which has to be paid to MGIRED as consultancy fee.
- 3.24.2 The bidder should disburse the above said amount in stages as specified in the below mentioned clauses.
- 3.24.2.a After the selection of lowest successful bidder Rs 62,500 plus GST.
- 3.24.2.b After successful installment of the SRTPV system Rs 62,500 plus GST.
- 3.24.2.c After third party evaluation Rs 62,500 plus GST.
- 3.24.3 Bidder should raise invoice addressing to Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani at every stage as specified in the preceding clause and channelize the payment in favor of Executive Director MGIRED.

Note:

1. No price escalation due to any reason (including any change in the applicable taxes, duties, surcharge etc.) shall be considered by Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani during the validity/ extended validity of the contract agreement

2. All the bank guarantees should be made from nationalized bank or from any scheduled commercial bank of repute, having its branch in Chinthamani.

3.25 MODULE MOUNTING STRUCTURE (MMS)

Modules shall be mounted on a non-corrosive support structures (Hot dip Galvanized) towards south facing and at a suitable inclination to maximize annual energy output. Support structure design and foundation or fixation mounting arrangements should withstand horizontal wind speed up to 180 km/hr and adhere to MNRE standards of building code for SRTPVS. **There is no scope of drilling for installation of MMS. The bidder has to take permission from Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani before installation and it is recommended to use super adhesive which complies UL746C certification and which holds structure for 25 years. Prior to the approval of the project, 5kWp solar panel, mms, cabling sample, civil works, earthing has to be demonstrated in the presence of Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani in order to seek his approval.**

3.25.1 The module mounting structure has to be installed only on pillars and parapet walls;

- a) On the existing Mango packhouse center, only the lower side legs of the structure apart from pillars can be mounted by constructing the concrete block on the RCC roof without grouting.
- b) On the existing administrative block only the upper side legs of the structure apart from pillars can be mounted by constructing the concrete block on the RCC roof without grouting.
- c) Water proofing has to be done on the concrete structure where the MMS would be mounted. Tar sheet has to be put in and around the concrete structure up to 2 feet from the foundation structure .
- d) Adequate moisture for the foundation blocks has to be maintained by watering the foundation blocks three times a day for 6-7 days.

3.25.2 Necessary arrangements and approvals has to be taken from Deputy Director of Horticulture, Mango post Harvest handling centre so that module mounting structure should not experience any type of sag between pillars after the installation.

3.26 DC DISTRIBUTION BOARD (DCDB)

A DCDB shall be provided in between grid tied inverter and Solar Array. It shall have circuit breaker of Suitable rating, DC fuses for connection and disconnection of array section with suitable surge protection and MCB.

3.27 TEST REPORTS

Performance of PV module, inverter, cables, meters and any other major component must be tested and approved by one of the IEC / NABL accredited testing laboratories including Solar Energy Centre.

3.28 WARRANTY

- **PV modules used in solar power plant must be warrantied 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.** The mechanical structures, electrical works including Power conditioners/ inverters/ charge controllers/ maximum power point tracker units/ distribution boards/ digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for the term of the contract.
- **Inverters used in solar power plant must have a free replacement warranty for a minimum of 5 years as per MNRE guidelines.**
- The mechanical structures, electrical works including Power conditioners/ charge controllers/ maximum power point tracker units/ distribution boards/ digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for the term of the contract.

3.29 OPERATION MANUAL

Five Copies of Operation, Instruction and Maintenance Manual, in English should be kept at the MANGO POST HARVEST HANDLING CENTRE, MADIKERE CROSS, CHINTHAMANI premises/provided. The detailed diagram of wiring and connection diagrams should also be provided with the manual.

3.30 CONFIDENTIALITY

The Bidder agrees that, all information pertaining to Mango post Harvest handling centre, Madikere cross, Chinthamani's business and other information by Mango post Harvest handling centre, Madikere cross, Chinthamani are confidential information of Mango post Harvest handling centre, Madikere cross, Chinthamani. The same shall be kept confidential and shall not be disclosed to any third party without the prior written approval of Mango post Harvest handling centre, Madikere cross, Chinthamani.

SECTION 7

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the General Conditions is indicated in parentheses.

7.1 DEFINITIONS (GCC Clause 1)

- (a) The Purchaser is Deputy Director of Horticulture, Mangopost Harvest handling centre. Madikere cross, Chinthamani.
- (b) The Supplier is

7.1.1 Inspection and Tests (GCC Clause 7)

The following inspection procedures and tests are required by the Purchaser: The supplier shall get each item indicated in the schedule of requirement inspected, according to the industrial standards or specification of the manufacturing country, before shipment by an inspection agency (Third party) of manufacturing country. At the place of commissioning the equipment following inspections are required to be carried out by an appropriate third party or technical team;

- a) Equipment supplied as per Schedule of requirement
- b) Proper commissioning
- c) Programming
- d) Connectivity with Mango post Harvest handling centre, Madikere cross, Chinthamani Office
- e) Completion of training
- f) Efficient performance of the equipment's supplied

The inspections and tests shall be as detailed in Section V - Schedule of Requirement:

The supplier shall get each item indicated in the Schedule of requirement inspected in manufacturer's works and submit a test certificate and also manufacturer's guarantee /warranty certificate that the items conform to the laid down specification before dispatch.

The Purchaser or its representative may inspect and /or test any or all the items to confirm their conformity to the contract specification, prior to dispatch from the manufacturer's premises. Such inspection and clearance will not prejudice the right of



the consignee to inspect and test the items on receipt at destination to verify conformity to technical specification.

If the items fail to meet the laid down specifications the supplier shall take immediate steps to remedy the deficiency or replace the defective parts of the each to the satisfaction of the purchaser/ consignee.

The Inspections and tests shall be conducted at: Mango post Harvest handling centre, Madikere cross, Chinthamani premises by technical team of Mango post harvest handling centre, madikere cross, Chinthamanior their authorized representatives.

7.1.2 Delivery and Documents (GCC Clause 9)

Upon delivery of the Goods, the supplier shall notify the purchaser and the insurance company by cable/telex/fax the full details of the shipment including contract number, railway receipt number and date, description of goods, quantity, name of the consignee etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

- (a) Fourcopies of the Supplier invoice showing contract number, goods' description, quantity, unit price, total amount;
- (b) Acknowledgment of receipt of goods from the consignee(s);
- (c) Four copies of packing list identifying the contents of each package;
- (d) Insurance Certificate;
- (e) manufacturer's/Supplier's warranty certificate;
- (f) Inspection Certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; and certificate of origin.

The above documents shall be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

7.1.3 Incidental Services (GCC Clause 12)

The following services covered under Clause 12 shall be furnished and the cost shall be included in the contract price:

Such as Inland transportation, insurance charges, Loading and unloading, installation, assembling and any other charges with respect to this contract execution shall be included in the price schedule.

7.1.4 Settlement of Disputes (GCC Clause 27)



The dispute settlement mechanism to be applied pursuant to GCC Clause 27.2.2 shall be as follows:

- (a) If the contractor is not satisfied with the decision taken by the purchaser, dispute shall be referred by either party to arbitration tribunal within 30 days of the notification of the purchaser's decision.
- (b) If either party refers the dispute to the arbitration tribunal within 30 days, the purchaser decision will be final and binding.
- (c) Arbitration proceedings shall be held at Chintamani/Chikkaballapur, Karnataka, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (d) The decision of the of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the Arbitrator. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings shall be borne by each party itself.
- (e) Bidding process shall be governed by, and construed in accordance with, the laws of INDIA and the courts at Chikkaballapur shall have exclusive jurisdiction only over all disputes arising under, pursuant to and/ or in connection with the bidding process.

7.1.5 Notices (GCC Clause 32)

For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.

Purchaser: Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani

Supplier: (To be filled in at the time of Contract signature)

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7.1.6 Progress of Supply:

Supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under :

- Quantity offered for inspection and date;
- Quantity accepted/rejected by inspecting agency and date;
- Quantity dispatched/delivered to consignees and date;
- Quantity where incidental services have been satisfactorily completed with date;
- Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;

- Date of completion of entire Contract including incidental services, if any; and Date of receipt of entire payments under the Contract
- (in case of stage-wise inspection, details required may also be specified).

7.1.7 Right to use defective equipment:

If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the equipment proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such equipment until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

7.1.8 Supplier Integrity:

The supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state-of-the-art methods and economic principles and exercising all means available to achieve the performance specified in the Contract

7.1.9 Supplier's Obligations:

The Supplier is obliged to work closely with the Purchaser's staff, act within its own authority and abide by directives issued by the Purchaser and implementation activities.

The Supplier will abide by the job safety measures prevalent in India and will free the Purchaser from all demands or responsibilities arising from accidents or loss of life the cause of which is the Supplier's negligence. The Supplier will pay all indemnities arising from such incidents and will not hold the Purchaser responsible or obligated.

The Supplier is responsible for managing the activities of its personnel or sub-contracted personnel and will hold itself responsible for any misdemeanors.

The Supplier will treat as confidential all data and information about the Purchaser, obtained in the execution of his responsibilities, in strict confidence and will not reveal such information to any other party without the prior written approval of the Purchaser.

7.1.10 Patent Rights: (GCC Clause 2)

In the event of any claim asserted by a third party of infringement of copyright, patent, trademark or industrial design rights arising from the use of the Goods or any part thereof in the Purchaser's country, the supplier shall act expeditiously to extinguish such claim. If the supplier fails to comply and the Purchaser is required to pay compensation to a third party resulting from such infringement,



the supplier shall be responsible for the compensation including all expenses, court costs and lawyer fees. The Purchaser will give notice to the supplier of such claim, if it is made, without delay.

7.1.11 Scope of Supply

The scope of work and related services to be done/provided shall be as specified in the scope of work.

7.1.12 Price

The prices charged for the goods supplied and related services performed shall not be adjustable.

PART 4

DETAILS OF THE SCOPE OF WORK

4.1 GENERAL TECHNICAL SPECIFICATIONS AND SCOPE OF WORK

4.1.1 The scope of work involves the following:

4.1.1.1 Successful bidder must design and install a efficient and maximum yielding grid connected solar PV plant for the given location by considering variables like irradiation, orientation of panels, etc.,

4.1.1.2 Bidder should design and construct staircases, pathways for easy access to the roof and solar PV array. Further, pathways should facilitate safe movement of personnel accessing the PV array for periodic cleaning and maintenance of panels and also to ensure safety of the people involved during installation commissioning and maintenance. The bidder should not consider spiral staircase in his quote. **The staircase shall be a minimum of 2.5 feet and easy movement for man and materials. The staircase should be of half landing made up of MS material with suitable baluster and hand rail which has to be considered for a minimum height of 1 floor.**

4.1.1.3 Bidders shall visit the site prior to the bid if any clarification required only for staircase, pathway and railings.

4.1.1.4 Bidder should install pressure pump and suitable water piping arrangement has to be made for the maintenance of PV modules installed on roof top of Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani with an MCB and protection device. Further necessary gate valves for cleaning of the panels at the bottom and terrace of the building has to be provided.

4.1.1.5 The selected bidder should agree to set up and commission solar plant within twelve weeks from date of signing of contract.

4.1.1.6 State of art plant efficiency monitoring and data logging system will be an integral part of the solar power plant. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani should be able to do diagnostics & monitor all plant efficiency related parameters.

4.1.1.7 Metering and grid connectivity of the solar PV system under this scheme would be the responsibility of the bidder in accordance with the prevailing guidelines of the BESCO. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani could facilitate connectivity as and wherever possible; however, the entire



responsibility and its expenses like registration, approvals etc., lies solely with bidder.

- 4.1.1.8 Bidder shall bear whole project costs such as cost of engineering, procurement, commissioning, synchronizing to grid, Net metering, Check meter, insurance premium, administrative, logistic cost etc.
- 4.1.1.9 All EPC work including the transportation of material and machinery to and from the project site will be the responsibility of the bidder.
- 4.1.1.10 Bidder should be ISO certified in their capacity as a Solar Integrator and shall carry out all works under the project up to the said ISO standards.
- 4.1.1.11 Bidder shall bear all risks of loss and damage to any part of the solar power plant due to conditions not on account of Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani.
- 4.1.1.12 Bidder will submit technical details like Generation estimate, SLD, Financial economics, preliminary system design used along with the tentative bill of material such as panel, inverter make, Cables, MCB, SPD, Lightning Arrester, Earthing kit make etc.
- 4.1.1.13 Necessary cabling till the consumer end and upto grid shall be done as per IE rules.
- 4.1.1.14 Bidder will follow all internationally applicable electrical safety norms in installation of solar plant.
- 4.1.1.15 Bidder shall take permission from Chief Electricity Inspector for setting up the plant.
- 4.1.1.16 Bidder shall take permission from concerned authorities (Local/state/central) if required under any Laws, rules and regulations.
- 4.1.1.17 Any damage caused to any assets of Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani due to construction activities or the operation of the plant thereof will be the responsibility of the Bidder and it will be required to fix the damage as per the specification of Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani or compensate an equivalent amount
- 4.1.1.18 Bidder has to comply with the Environmental, Occupational Health & Safety and Security requirements of Mango Post Harvest



Handling Centre, Madikere Cross, Chinthamaniand has to ensure that adequate measures have been taken from their end for the safe working of their men and machines.

4.1.1.19 The project progress will be monitored by Deputy Director of HorticultureMango Post Harvest Handling Centre, Madikere Cross, Chinthamaniand the projects will be inspected for quality at any time during commissioning or after the completion of the project either by officer(s) from Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanior any authorized agency/ experts at Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani.

4.1.1.20 Mango Post Harvest Handling Centre, Madikere Cross, Chinthanimay depute a technical person(s) from its list of empaneled experts for inspection, seek Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturing facilities to check the quality of products as well as to visit the system integrators to assess their Technical specification as and when required.

4.2 Schedule of Requirements

Serial Number	Brief Description	Quantity	Delivery Schedule	EMD in Rupees
1	1) DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, SYNCHRONIZATION TO GRID AND APPROVALS, OF 72kWp GRID CONNECTED ROOFTOP SOLAR POWER PLANT at MANGO POST HARVEST HANDLING CENTRE, MADIKERE CROSS, CHINTHAMANI. 2) STAIRCASES, PRESSURE PUMP AND PIPING FOR ALL BUILDINGS. 3) FIVEYEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FROM 6 TH TO 10 TH YEAR.	One	Delivery in 12 weeks at Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani from the date of Work Order	NIL

- **Inspection and Tests**

The following inspections and tests shall be performed:

1. Inspection and tests prior to shipment of Goods and at final acceptance are as follows:

(i) 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 General Conditions of contract. Following broad test procedure will generally be followed for inspection and testing of equipment's. The supplier shall install the equipment at the designated places in conformation with the specification & drawings. The purchaser will test the equipment after completion of the installation and commissioning at the site of the installation. Complete goods as specified in



section VII should be supplied, installed and commissioned properly by the supplier prior to commencement of performance tests.

(ii) The acceptance test will be conducted by the purchaser their consultant or any other person nominated by the purchaser, at its option. The acceptance will involve trouble- free operation for seven consecutive days. There shall not be any additional charges for carrying out acceptance tests. No malfunction, partial or complete failure of any part of Sensor and whole grading and bunching equipment due to the natural environment or bugs in the internal software should occur. All Equipment should be as per the IEC standards specified in the Technical Specification as mentioned in Part 4. All the sensor and system should be complete and no missing modules/errors will be allowed. The supplier shall maintain necessary log in respect of the results of the tests to establish to the entire satisfaction of the purchaser, the successful completion of the test specified. An average uptake efficiency of 100 % for the duration of test period shall be considered as satisfactory.

(iii) In the event of the supplied goods failing to pass the acceptance test, a period not exceeding two weeks 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.

4.3 TECHNICAL SPECIFICATIONS

The general guidelines on technical and functional specification are given here. Bidder will evaluate the site and submit the capacity estimation along with the layout. The output of the inverter system is to be connected with the grid at 11 KV systems which would be situated in the Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanicampus.

4.3.1 Standards

System	Applicable BIS /Equivalent IEC Standards / Applicable MNRE Specifications		
	Standard Description		Standard Number
i	Poly Crystalline Silicon Terrestrial PV		IEC 61215/ IS14286
ii	Solar PV module safety qualification requirements		IEC 61730 (P1 – P2)
iii	PID free PV modules		IEC 62804

4.3.2 SOLAR PV MODULES

All the PV modules should be of same batch

Type	Mono crystalline Technology
Origin	Manufactured in India
Module Efficiency	≥19.79%
Cells	Mono PERC (144 cells)
Bus Bar Technology	9 BBT
Fill factor	≥ 70%
Application Class	Class A (Safety class II)
Back Sheet	Composite film
Frame	Anodized aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	20 A
Junction Box	IP68/IP67, Split Junction Box with individual bypass diodes
Cable & Connectors	400 mm length cables, MC4 Compatible/MC4 Connectors
Product warranty	Minimum of 10 years product warranty
Performance Warranty	Should not be less than 90% of designed nominal power at the end of 10 years and 80% of designed nominal power at the end of 25 years.
Module frame	Anodized aluminum. Non-corrosive and electrolytically compatible mounting structure
Mounting structure	Metallic mounting structure. Hot dip Galvanized with 80 microns thickness
Module minimum rated power	The nominal power of a single PV module shall be ≥440Wp .
RF Identification tag for each solar module	Must be able to withstand environmental conditions and last the life of the solar module and shall be kept inside the module laminate.
RF Identification tag data	<ul style="list-style-type: none"> 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) Wp, Im, Vm 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 standard
Power output rating	To be given for standard test conditions (STC). IV ,PV curve of the All modules should be submitted.

4.3.3 SOLAR PV MODULE MOUNTING STRUCTURE

The PV modules shall be mounted on fixed metallic structures of adequate strength and appropriate design, which can withstand the load of the modules and high wind velocities up to 180 km per hour.

4.3.3.1 The module mounting structure will be designed in such a way that it will occupy minimum space without forfeiting the output from SPV panels & shall be designed to allow easy replacement of any module.

4.3.3.2 Bidder may design foundation (RCC and PCC) and structure considering the wind loads and structural load bearing capacity of the building. The minimum dimensions of the foundation should not be less than **1.5 feet *1.5 feet *1.5 feet (L * W * H)**. The bidder must ensure no water leakage happens to the structure and proper water proofing in case of any modifications to the roof.

4.3.3.3 **There is no scope of drilling for installation of MMS, pathways. The bidder has to take permission from Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani before installation and it is recommended to use super adhesive which complies UL746C certification and which holds structure for 25 years. A demonstration has to be done in the presence of Deputy Director of Horticulture, Mango post Harvest handling centre, Madikere cross, Chinthamani and to seek his approval.**

4.3.3.4 Detailed specifications for the mounting structure are given below:

Wind velocity withstanding capacity	180 km / hour
Structure material	Structural materials shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Hot dip galvanized steel with galvanization thickness of min 80 micron or aluminum alloy.
Bolts, nuts, fasteners, panel mounting clamps	Stainless steel SS304
Mounting arrangement for flat roofs	With Removable concrete made of Pre-fabricated PCC(1:2:4), M15 and

	dimensions of 1.5*1.5*1.5 feet (L*W*H).
Installation	The structures shall be designed for simple mechanical on-site installation
Access for panel cleaning and maintenance	All solar panels must be accessible from the top for troubleshooting and cleaning
Panel tilt angle	North – South orientation with a fixed tilt angle depending on location (south facing)
Spares	Required numbers of spare structures must be provided.
Warranty	The structure must have a free replacement warranty for 5 years as per MNRE Guidelines.

The prospective Installer shall specify installation details of the solar PV modules and the support structures with layout drawings and array connection diagrams. The work shall be carried out as per the designs approved by concerned tender inviting authority.

4.3.4 ARRAY JUNCTION BOX (AJB)

The array junction boxes are free of dust, vermin, and waterproof and made of Thermo Plastic. The terminals will be connected to copper bus-bar arrangement of proper sizes. The array junction boxes will have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.

Material Thermoplastic	Dust, Vermin & Water proof
Hardware SS 304	Cable Gland Thermoplastic
Protection	IP 65 enclosures with transparent covers with Surge Protection Device (SPD) class-I/II, MCB, DC Fuse with holder and string disconnecter.

Surge Protection Device (SPD): Internal surge protection shall consist of threeMOV/GDT (glass discharge tube) type arrestors connected from +ve and –ve terminals to earth (via Y arrangement) for higher withstand of the continuousPV-DC voltage during earth fault condition. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC inbuilt 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.

4.3.4.1 A surge protection device in each sub-array line shall be provided to prevent the high current transients from entering into the DC bus. Busbar must be made from tinned plated copper.

4.3.4.2 It must be with DC disconnect switch and DC fuses positive side shall have a voltage rating of 1000V DC, current rating as required.

4.3.5 DC Distribution Box (DCDB)

A DC distribution box shall be mounted close to the solar grid inverter. The DC distribution box shall be of the thermo plastic IP65 DIN rail mounting type and shall comprise the following components and cable terminations:

- Incoming 2 core (Positive and negative DC) cables from the DC Combiner Box;
- DC circuit breaker, 2 pole (the cable from the DC Combiner Box will be connected to this circuit breaker on the incoming side);
- DC surge protection device (SPD), class 2 as per IEC 60364-5-53;
- Outgoing 2 core cable (Positive and negative DC) to the solar grid inverter.

As an alternative to the DC circuit breaker a DC isolator may be used inside the DC Distribution Box or in a separate external thermoplastic IP 65 enclosure adjacent to the DC Distribution Box. If a DC isolator is used instead of a DC circuit breaker, a DC fuse shall be installed inside the DC Distribution Box to protect the DC cable that runs from the DC Distribution Box to the Solar Grid Inverter.

4.3.6 DC and AC CABLES

4.3.6.1 For the DC cabling, XLPE insulated and PVC sheathed, UV stabilized single core flexible copper cables shall be used. Multi-core cables shall not be used.

4.3.6.2 For the AC cabling, PVC or XLPE insulated and PVC sheathed single or multi-core flexible copper cables shall be used. Outdoor AC cables shall have a UV-stabilized outer sheath.

- 4.3.6.3 The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.
- 4.3.6.4 The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%
- 4.3.6.5 The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
- 4.3.6.6 Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors and couplers.
- 4.3.6.7 All cables and conduit pipes shall be clamped to the rooftop/walls/parapet with thermo-plastic clamps at intervals not exceeding 50 cm.
- 4.3.6.8 The minimum DC cable size shall be 4.0/6.0 mm² copper. The minimum AC cable size shall be 6.0 mm² copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.
- 4.3.6.9 **Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipes.**
- 4.3.6.10 Cable conductors shall be terminated with tinned copper lugs with proper ferruling to prevent fraying and breaking of individual wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instructions of the manufacturer, which in most cases will include the use of special connectors.
- 4.3.6.11 Only copper cables of appropriate size and of reputed-make shall have to be used.
- 4.3.6.12 All connections should be properly terminated, soldered and/or sealed from outdoor and indoor elements. Relevant codes and operating manuals must be followed. Extensive wiring and terminations (connection points) for all PV components is needed along with electrical connection to lighting loads.
- 4.3.6.13 All the Cu PVC or XLPE insulated Armored. Sheathed cables required for the plant will be provided by the manufacturer.
- 4.3.6.14 Only terminal cable joints shall be accepted. No cable joint to join two cable ends shall be accepted. All cable/wires shall be marked with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.
- 4.3.6.15 All Cables shall conform to IEC: 62548 safety standard and relevant IS/ IEC standards.
- 4.3.6.16 All cables shall be supplied in the single largest

length to restricting the straight through joints to the minimum number.

4.3.7 AC Distribution Box

4.3.7.1 An AC distribution box shall be mounted close to the solar grid inverter. The AC distribution box shall be of wall / rail mounting type and shall comprise of following components:

- Incoming 4 core cable from the solar grid inverter
- AC circuit breaker, 4 pole
- AC surge protection device (SPD), class 2 as per IEC 60364-5-53
- Outgoing cable to the building electrical distribution board.

4.3.7.2 A manual disconnect switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personal to carry out any maintenance. This switch shall be locked by the utility personal.

4.3.8 GRID TIED INVERTER AND BI-DIRECTIONAL METER

Only BESCOM empaneled Grid tied inverters and Bi-directional meter shall be used.

4.3.9 Standards for other components

Cables	<p>General Test and measuring method PVC insulated cables for working voltage upto and including 1100V and UV resistant for outdoor installation for A.C. cables.</p> <p>(It is suggested to use D.C. rated, UV resistant Photovoltaic cable having plug and play capability cables)</p>	<p>IEC 60227/IS 694 IEC 60502 / IS 1554 IEC 62548 (part I & II)</p>
Earthing	<p>AC Earthing (System Earthing)</p> <p>DC Earthing for Panels and Lightning arrester (Components Earthing)</p>	<p>IS 3043: 1986 (Pipe Earthing for AC) Maintenance free Chemical Earthing for DC</p>

Switches/ CircuitBreakers/ Connectors	General Requirements Connectors -safety A.C. /D.C.	IEC 60947 Part I,II, III /IS 60947 Part I,II, III /EN 50521
Junction Boxes/ Enclosures for Charge Controllers/ Luminaries	General Requirements	IP 65 (for outdoor) / IP 21 (for indoor) As per IEC 529

4.3.10 Balance of system materials:

4.2.10.1 Data logger:

- The communication local to the Solar Energy Generator shall follow Industry Standard like RS232 or RS485 or RJ45 LAN
- Communication between the Solar Energy Generator and the Application running on the Server shall be based on GSM/GPRS.
- Battery backup for data logger system is mandatory
- The data to be logged and made available as follows:-
 - ❖ Instantaneous DC Voltage
 - ❖ Instantaneous DC Current
 - ❖ Instantaneous AC Voltage
 - ❖ Instantaneous AC Current
 - ❖ Conversion Efficiency
 - ❖ Voltage graph showing Volts in Y-axis and Time-of-Day on X-axis.Similarly Current graph
 - ❖ Total AC Power generated per day, per week and per month showing Power Generation Profile graphs
 - ❖ Peak Power generated
 - ❖ Monthly Power generation charts showing the total power generated in each month.

4.3.10.2 PV array energy production: Digital Energy Meters to log the actual value of AC/ DC Voltage, Current & Energy generated by the PV system shall have to be provided.

4.3.10.3 Solar Irradiance: An integratedPyranometer (Class II or better) shall be provided, with the sensor mounted in the plane of the array. Readout shall be integrated with data logging, system.

4.3.10.4 Wind Speed: An integrated wind speed measurement unit shall be provided.

- 4.3.10.5 Temperature: Temperature probes for recording the Solar panel temperature and ambient temperature shall be provided.
- 4.3.10.6 If there exists more than one inverter, data logger should display the combined results of all inverters.

4.3.11 Earthing protection and Lightning Arrester

- 4.3.11.1 Earthing protection: Dedicated, Chemical maintenance free earthing and interconnected earth electrodes must be used for the earthing of the solar PV system support structure with a total earth resistance not exceeding 5 ohms. (Mention Technical details of earthing kit)
- (i) PV array, MMS, SPD (DC)
 - (ii) Lightning arrester (DC)
 - (iii) System earthing (AC)

- ❖ PV array, MMS, SPD (DC) : All the non-current carrying metal parts such as PV modules, MMS, DCDB are bonded together and connected to earth to prevent shocks to humans and protection of the equipment.
- ❖ Lightning arrester (DC): Lightning Arresters are bonded together and provided separate earthing.
- ❖ System earthing (AC): All the non-current carrying metal parts such as ACDB, Inverter shall be bonded together and earthed / integrated to existing AC earthing.
- ❖ Earthing shall be done in accordance IS 3043-1986, provided that earthing conductors shall have a minimum size $3\text{mm}^2 \times 70\text{mm}^2$ hot dip galvanized iron flat. Unprotect aluminium or copper-clad aluminium conductors shall not be used for final underground connections to earth electrodes.
- ❖ The earth electrodes shall have a pre-cast concrete enclosure with a removal lid for inspection and maintenance. The entire earthing system shall comprise non-corrosive components.

4.3.12 Marking and Signage

- 4.3.12.1 In addition to the standard caution and danger boards or labels as per Indian Electricity Rules, the AC distribution box near the solar grid inverter and the building distribution board to which the AC output of the solar PV system is connected shall be provided with a noncorrosive caution label.
- 4.3.12.2 The size of the caution label shall be 105mm (width) x 20mm (height) with white letters on a red background.

4.3.13 Metering scheme and Check meter:

- 4.3.13.1 The bi-directional (import kWh and export kWh) meter shall be fixed at the point of grid connectivity (the “Solar Service Connection Meter”) for the purpose of net-metering as per below diagram
- 4.3.13.2 The existing meter shall be rewired to record total solar generation.
- 4.3.13.3 Both bi-directional and solar generation side meter shall be in same vicinity.
- 4.3.13.4 The bi-directional meter shall comply with the requirements of CEA Regulations on Installation and Operation of Meters.
- 4.3.13.5 Meter must also display on demand, instantaneous, AC system voltages and currents, frequency, reactive power with sign.
- 4.3.13.6 Check meter has to installed along with Bi-directional meter for accurate reading.

- ❖ For all HT installations – 0.2S class meter, 0.2 class CT’s of suitable ratio and 0.2 class PT’s $11kV / \sqrt{3} / 110V / \sqrt{3}$

Note: For HT installations, if the existing meter cubicle is having 2 element system of 2 CTs, 2 PTs and metering with three wire system, it shall be replaced by 3 element system of 3 CTs, 3 PTs and metering with four wire system. Any upgradation in the existing meter cubicle or infrastructure has to be considered by the bidder in the financial bid.

4.3.14 Connection to Building Electrical System

The AC output of the solar grid inverter shall be connected to the building’s electrical system after the BESCO service connection meter at the consumer busbar by providing suitable capacity manual disconnector, ACB(Air Circuit Breaker). The solar grid inverter output shall be connected to a dedicated module in the Main Distribution Board (MDB) of the building. It shall not be connected to a nearby load or socket point of the building. Existing MCCB spare chamber in the LT panel location can be used for placement of solar MCCB. Any further upgradations/requirements for successful synchronization has to be considered in the bid value.

Note: Any system upgradation in the existing infrastructure at the incoming and outgoing side like MCCB, MCB, Panel board, Isolators, Cables required to connect to grid shall be carried out by the bidder and should be considered in the bid value.

4.3.15 Half landed metal Staircases of 2.5 feet width shall be designed and

installed before the installation of MMS for existing mango packhouse center building according to Indian standards.

4.4 DRAWINGS & MANUALS:

- 4.3.1 Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
- 4.3.2 Approved ISI and reputed makes for equipment be used.
- 4.3.3 For complete electro-mechanical works, Bidders shall supply complete design, details and drawings for approval to Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanibefore progressing with the installation work.

4.5 PLANNING AND DESIGNING:

- 4.5.1 The Bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The Bidder should submit the array layout drawings along with Shadow Analysis Report to Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanifor approval.
- 4.5.2 Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanireserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.
- 4.5.3 The Bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The Bidder submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

4.6 DRAWINGS AND DOCUMENTS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT

- ❖ The successful bidder shall furnish the following drawings Award/Intent and obtain approval
- ❖ General arrangement and dimensioned layout
- ❖ Schematic drawing showing the requirement of SPV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- ❖ Structural drawing along with foundation details for the structure.
- ❖ Itemized bill of material for complete SPV plant covering all the components and associated accessories.
- ❖ Layout of solar Power Array
- ❖ Shadow analysis of the roof
- ❖ Stadd report and galvanizing report for module mounting structure
- ❖ Estimated system yield.



PART 5

TECHNICAL BID

5.1 Solar modules

Sl. No.	Details regarding	Proposed by Bidder
1	Name of the manufacturer & Make of Solar Module	
2	Type of Solar Cell and Panel Wattage	
3	Type of Frame Structure (MS/SS)	
4	Enclosed supporting documents if any	
5	Details in case of any deviation from the technical specifications as specified in the tender document.	
6	Warranty	

5.3 Items/Component

Sl. No.	Details regarding	Proposed by Bidder
1	Name of the manufacturer & Make of PCU/ Inverter	
2	Name of the manufacturer & Make of Charge Controller/ MPPT Units (if Any)	
3	Name of the manufacturer & Make of Switches/Circuit Breaker/ Connectors	
4	Enclosed supporting documents if any	
5	Details in case of any deviation from the technical specifications as specified in the tender document.	
6	Warranty	

5.3 Civil structure details if any

Sl. No.	Details regarding	Proposed by Bidder
1		
2		
3		
4		
5		

5.4 Electrical installation details with modules, plans etc.,

Sl. No.	Details regarding	Proposed by Bidder
1		
2		
3		
4		
5		

5.5 Any other relevant information

Sl. No.	Details regarding	Proposed by Bidder
1		
2		
3		
4		
5		

5.6 Details of executed projects

Sl. No.	Item	Particulars of the Project
1	Title & nature of the project	
2	Entity for which the project was developed	
3	Location and contact details	
4	Project cost (Rs. lakhs)	
5	Date of commencement of project	
6	Date of completion/ commissioning	
7	Technology used for the project	
8	Total Units generated from the Project	
9	Whether the project is developed by alone or with consortium etc.	
10	Any other information	

(Signature of bidder with Seal)



5.7 Please fill in information about Grid Connected Solar PV Systems installed in last three years

Details	Year		
	2018-19	2019-20	2020-2021
Capacity of Grid Connected Solar PV Power Plants installed (in kW)			
Total contract amount			
Total power generated			
Time taken for completion of the project			

NOTE: Above details without copies of work orders, completion certificates and satisfactory performance reports from the users will not be considered.

(Signature of Bidder with Seal)

5.8 Details of Sale/Service Centers in Karnataka/other state

Sl. No.	Name of District	Details of Sale/ Services Center with contact Nos.

(Signature and Seal of the Bidder)



PART 6

FINANCIAL BID

Sl.No.	Name of Work	Qty.	Amount in INR (To be uploaded only in e-procurement)
1	DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, SYNCHRONIZATION TO GRID 72kWp GRID CONNECTED ROOFTOP SOLAR POWER PLANT AT MANGO POST HARVEST HANDLING CENTRE, MADIKERE CROSS, CHINTHAMANI (INCLUDING NECESSARY APPROVALS FOR SYNCHRONIZING THE PLANT TO GRID WITH NET METERING CONNECTION INCLUDING EARTHING, LIGHTENING ARRESTER, ETC., WITH FIVE YEARS WARRANTY OF COMPLETE SYSTEM AS MENTIONED IN THE SCOPE OF WORK) INCLUDING GST.	One Unit	
2	STAIRCASE FOR EXISTING MANGO PACKHOUSE CENTER AND PRESSURE PUMP, MOTOR AND PIPING FROM SUMP FOR BOTH THE BUILDINGS INCLUDING GST.	One Unit	
3	MGIRED CONSULTANCY FEE OF INR 1,87,500 PLUS GST /- HAS TO BE CONSIDERED IN THIS FINANCIAL BID.	One Unit	
	Sub Total 1		
4	FIVE YEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FROM 6 TH YEAR TO 10 TH YEAR INCLUDING GST.	One Unit	
	6 TH YEAR	One Unit	
	7 TH YEAR	One Unit	
	8 TH YEAR	One Unit	
	9 TH YEAR	One Unit	
	10 TH YEAR	One Unit	
	Sub Total 2		
5	TOTAL AMOUNT IN INR INCLUSIVE OF GST (Sub Total 1 + Sub Total 2)		
6	TOTAL AMOUNT IN WORDS (Sub Total 1 + Sub Total 2)		



Note: Amount for Comprehensive maintenance contract should be specified for each year from 6th to 10th year and the amount will be released at the end of each year after the completion of 5 years warranty period. CAMC amount has to be included in the total amount.

- **Cost shall include all the applicable taxes**

6.1 Certified that:

6.1.1 Above rates are in accordance with the all the specifications, various terms, conditions and requirements mentioned in this tender document, to perform the work satisfactorily.

6.1.2 The rates are inclusive of all taxes and duties what so ever.

6.1.3 MGIRED consultancy fee of **INR 1.875 lakhs plus GST** has to be considered in this financial bid. Refer to 3.24 Payment terms for MGIRED consultancy fee.

(Signature of Bidder with Seal)

PART 7 LIST OF DOCUMENTS TO BE SUBMITTED

7.1 Certified true copy of:

Sl. No.	Document	Yes	No	Reason for not enclosing
1	Certificate of incorporation.			
2	Memorandum & articles of association.			
3	GST Registration certificate/PAN.			
4	Nature of the firm (Individual/ Partnership/ Pvt. Ltd /Public Ltd. Co. /Public Sector etc.) The Association of various firms like Consortium /Joint Venture/ Special Purpose Vehicle etc. Please Attach attested copy of Registration/Partnership/JV agreement etc or any other relevant documents etc.			
5	Documents related to Joint venture company/ consortium, if applicable.			
6	Certificate of registration of establishment issued by the labour department.			
7	Copy of completion/experience certificate from vendors.			
8	Copy of customer satisfaction certificates.			
9	Board resolution/authorization letter/power of attorney issued in favour of the authorized signatory, authorizing to represent and sign the proposal/agreement.			
10	Auditor statements of last 3 financial years			
11	Materials test report with catalogue			



7.2 Certified true copy of: Bidder shall provide the following details as a part of its technical proposal

Sl. No.	Document	Yes	No	Reason for not enclosing
1	Company profile with organization structure			
2	Design experience of solar PV system.			
3	Years of experience in execution, Testing and commissioning of solar power plant.			
4	Organization presence in solar business and details of the technology used for Manufacturing.			
5	Details regarding timely execution (Both in India and abroad) of project and track record.			
6	>100kW class experience in India in the last 1-3 years			
7	Strategic partnership, long term alliances in Indian market and market reputation			
8	Projects executed in absolute kW year to date with location details.			
9	Reference contact details where company has executed solar system and copies of customer satisfaction reports			
10	Copies of statutory requirement/government license			

7.3 Details regarding bidders:

Sl. No.	Document	Yes	No	Reason for not enclosing
1	Firm/Company History;			
2	Promoters;			
3	Existing Shareholding Pattern;			
4	Countries / Cities of Operations;			
5	Management Strategy;			
6	Total Turnover for the last three years; (Attach balance sheets attested from CA in this regard)			
7	Copies of all clearances, sanction and permissions required for generation the solar power plant.			

7.4 Litigation history

Sl. No.	Details of litigation (number, year Parityetc.,)	Nature of litigation

Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanireserves its right to demand any other additional information that might be relevant for the evaluation of the proposal, at a later stage.

(Signature of Bidder with Seal)

PART 8

DISCLAIMER

1. The information contained in this RFP document or subsequently provided to the Bidders, whether verbally or in documentary or any other form by or on behalf of Deputy Director of Horticulture, Mangopost Harvest handling centre, Madikere cross, Chinthamani, Pin No- 563125 (**Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani**) or any of its employees or advisers, is provided to the proposers on the terms and conditions set-out in this RFP, and such other terms and conditions subject to which, such information is provided.
2. This RFP is neither an agreement, nor, an offer by Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani to the prospective Bidders or any other person. The purpose of this RFP is to provide the Bidders with the information that may be useful to them, in the formulation of their Proposal. This RFP includes statements, which reflect various assumptions and assessments arrived at by Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani in relation to the work. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all the persons, and it is not possible for Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani, its employees or advisers to consider the objectives, technical expertise and particular needs of each party, who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis, and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP, and obtain independent advice from appropriate sources.
3. Information provided in this RFP to the proposers is on a wide range of matters, some of which depends upon interpretation of law. The information given, is not an exhaustive account of statutory requirements, and should not be regarded as a complete or authoritative statement of law. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani accepts no responsibility for the accuracy, or otherwise for any interpretation or opinion on the law expressed herein.
4. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani, its employees and advisers make no representation or warranty, and shall have no liability to any person including any proposer under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or



- deemed to form part of this RFP or arising in any way in this award process.
5. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamanialso accepts no liability of any nature, whether resulting from negligence or otherwise, however caused, arising from reliance of any Bidder upon the statements contained in this RFP. It is the responsibility of the Bidders to make their own assessment in preparing their Proposals.
 6. Mango Post Harvest Handling Centre, Madikere Cross, Chinthanimay, in its absolute discretion, but, without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP.
 7. The proposer shall bear all its costs associated with or relating to the preparation and submission of its Proposal including, but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstration or presentation, which may be required by Mango Post Harvest Handling Centre, Madikere Cross, Chinthamania or any other cost incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Bidder, and Mango Post Harvest Handling Centre, Madikere Cross, Chinthamania shall not be liable in any manner whatsoever, for the same, or, for any other costs, or, other expense, incurred by any Bidder, in preparation or submission of the Proposal, regardless of the conduct or outcome of the selection process.
 8. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani reserves the right to accept or reject any or all Proposals; qualify or disqualify any or all proposers without giving any reason, and is not obliged to correspond with any proposer in this regard. Further, Mango Post Harvest Handling Centre, Madikere Cross, Chinthamania reserves the right to relax, change, review, revise or/and cancel the eligibility criteria and the RFP process, at any time, without prior notice or without assigning any reason whatsoever.
 9. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani will not entertain any claim for expenses in relation to the preparation of any Proposal pursuant hereto.
 10. Mango Post Harvest Handling Centre, Madikere Cross, Chinthamani at its absolute discretion, reserves the right, until the closure of the Proposal submission, to modify any proposed terms and conditions set-out in the RFP as necessary, including but not limited to cancelling/withdrawing the RFP, to meet its objectives and principles as set-out below in this section.

(Signature of Bidder with Seal)