



**THE MADHYA PRADESH STATE AGRO INDUSTRIES
DEVELOPMENT CORPORATION LIMITED**

"PANCHANAN" 3rd FLOOR, MALAVIYA NAGAR, BHOPAL
Phone (0755)- 2556857

HO/ HORTI /2019-20/ 5377

Bhopal Dated 09.01.2020

EXPRESSION OF INTEREST

Expression of Interest (EOI) is invited for Rate Contract for SUPPLY AND INSTALLATION of Protected cultivation infrastructures (Green house / Shade net house / Poly house/ Poly tunnel structure) in "Open Ended System" up to 2.00 PM on 31.01.2020 along with Earnest Money Deposit, from eligible suppliers as detailed in the EOI documents, which is available at www.mpagro.org. Amendments if any, will be published on above website only. No further notification will be published in the news paper.

Dy.General Manager (Horticulture)



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"PANCHANAN" 3rd FLOOR, MALAVIYA NAGAR, BHOPAL

Phone (0755)- 2556857 EMAIL: mpagrohobpl@gmail.com

EXPRESSION OF INTEREST

**FOR RATE CONTRACT FOR SUPPLY AND INSTALLATION OF
PROTECTED CULTIVATION INFRASTRUCTURES**

(Green house / Shade net house / Poly house/ Poly tunnel structure)

FOR THE YEAR 2019-20 & 2020-21

OPEN UPTO 31ST JANUARY 2020



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**EXPRESSION OF INTEREST FOR RATE CONTRACT FOR
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(Green house / Shade net house / Poly house/ Poly tunnel structure)

This document contains 66 pages as below:

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Meaning of the words in the document

	The Corporation	M.P. State Agro Industries Development Corporation Ltd.
	EOI	Expression of Interest
	Beneficiary/ Consignee	The person / department who wish to purchase the items through this Corporation
	EOI/Application forms/ the document	Page 1 to 67 of this EOI.
	Applicant /Offerer	The Manufacturer / Authorized Distributor who submit offers for Rate contract for supply and installation of Items as per document
	The supplier	Firm whose rates are approved and an agreement for supply & installation has been executed with the Corporation under this EOI
	EMD	Earnest Money Deposit
	SD	Security Deposit
	Department	Directorate of Horticulture and Farm Forestry and Directorate of Sericulture Govt. of Madhya Pradesh. Or any other department of government of Madhya Pradesh
	Managing Director	Managing Director of M P State Agro Industries Development Corporation Ltd Bhopal
	PROTECTED CULTIVATION INFRASTRUCTURES	GREEN HOUSE / SHADE NET HOUSE / POLY HOUSE/ POLY TUNNEL STRUCTURE

Annexure 1

The Corporation is dealing in supply of various Agriculture and Horticulture inputs to the farmers and Govt. Departments of the State. The Corporation wishes to enter into rate contract with the manufacturer/supplier of Green house / Shade net house / Poly house/ Poly tunnel structure. This EOI is therefore invited in prescribed documents.

A. DISCLAIMER

Though adequate care has been taken in the preparation of this EOI document, the Offerer should satisfy himself that the documents are complete in all respect. Intimation of discrepancy, if any, should be given to M.P. Agro before date mention under this EOI. If M.P. Agro receives no intimation, it shall be deemed that the Offerer are satisfied that the document is complete in all respects.

B. EXPRESSION OF INTEREST PROCESS

C. The Expression of Interest (EOI) is invited. Details of other process are as below::

EOI Fee	Rs 23,600 (shall be paid by way of Demand Draft in the name of the Corporation)
EMD	Rs 5,00,000/--(shall be paid by way of Demand Draft in the name of the Corporation)
Two Demand draft as above in favor of "The M.P. State Agro Industries Corporation Limited" payable at Bhopal will be enclosed in Envelop A. Demand Draft of EMD will be returned in original if EOI is rejected. EOI fee is non refundable.	

Stages of Bidding

Process	Scheduled date	Scheduled time
Downloading of EOI	10.01.2020	from 11.00 am onward
Closing of bid	31.01.2020	2.00 PM
Date and time for submission of hard copies of signed EOI documents with required annexures/documents under EOI	From 10.01.2020 to 31.01.2020	2.00 PM of every day.
Opening of Technical Bid	On 15.01.2020 (EOI received from 10.01.2020 to 14.01.2020) On 22.01.2020 (EOI received from 15.01.2020 to 21.01.2020) On 31.01.2020 (EOI received from 22.01.2020 to 31.01.2020)	04.00 AM each date mentioned in schedule date

B. Prologue :

The State Government aimed to double farmer's income. Directorate of Horticulture and Farm Forestry is very keen to encourage farmers to adopt protected method of cultivation by implementing High Tech Cultivation Technologies such as Green house / Shade net House / Poly house/ Poly Tunnel structure with the following purposes:

- 1) Provides favourable micro climatic conditions for the plants,
- 2) Cultivation in all seasons is possible
- 3) Higher yield with better quality per unit area
- 4) Conserves moisture thus needs less irrigation
- 5) More suitable for cultivating high value / off season crops
- 6) Helps to control pest and diseases
- 7) Helps in hardening of tissue cultured plants
- 8) Helps in raising early nurseries
- 9) Round the year propagation of planting material is possible
- 10) Protects the crops from wind, rain, snow, birds, hail etc.
- 11) Generates self-employment opportunities for educated youth.

For the purpose of motivating farmers and fast adoption of such technologies, Directorate of Horticulture and farm Forestry, is providing financial assistance to the farmers for establishment of Green-house / Poly house/ Net house/ Poly Tunnel under Mission on Integrated Development of Horticulture and in State Scheme.

Financial Assistance

Financial assistance for Green house / Poly house /Shade Net house/ Poly Tunnel is to the extent of 50% of the total cost norms indicated below is admissible to all the beneficiaries for adoption of this technology by farmers with a maximum ceiling up to 4000 square meter per beneficiary.

<i>Items</i>	<i>Structure Size</i>	<i>Maximum permissible cost (Rs./Square meter) upto 4000 Square meter per beneficiary</i>
Poly house with Fan & Pad system	up to area 500 Sq. m	1650
	>500 Sq.m up to 1008 Sqm	1465
	>1008 Sq.m up to 2080 Sq.m	1420
	>2080 Sq. m upto 4000 Sq.m	1400
Naturally Ventilated Poly house	up to area 500 Sq. m	1060
	>500 Sq.m up to 1008 Sqm	935
	>1008 Sq.m up to 2080 Sq.m	890
	>2080 Sq. m upto 4000 Sq.m	844
Shade Net house	up to area 4000 Sq. m	710
Walk in tunnels	Up to 800 Sq. m	600

Maximum permissible cost (Rs./Square meter) upto 4000 Square meter per beneficiary indicated above is for calculation of financial assistance only. if actual cost is more than above limit, then financial assistance will be calculated on above norms

Following key points are needed to be addressed for successful large scale implementation of this scheme in the State.

- 1) Ensuring supply of all components as per the minimum standards specified by **National Committee on Plasticulture Application in Horticulture (NCPAH), Government of India and given in Rate Contract Offer.**
- 2) Ensuring quality of supply and installation of project components as specified in the guideline to safe guard farmers from future loss.
- 3) Assisting farmers in selection of suitable Supplier (manufacturer/fabricator) to implement Green house / Poly house / Net house / Poly Tunnel based on their requirement.
- 4) Ensuring training of operation of project as well as the agronomical inputs to farmers to achieve overall objective of increasing productivity and thus improving their income.
- 5) Ensuring trouble free operation of Green House / Poly House / Shade net House/Poly Tunnel, at least for 3 years after the project has been implemented.
- 6) To derive a reasonable cost for each type of technology through price discovery method. This will protect farmers from undue market practice.

C. **Scope of Work**

It covers Erection, Procurement and Commissioning, After Sales Services, Repair and Maintenance and Agronomical Services as under:

1 **Erection, Procurement and Commissioning**

- i.) The Supplier shall supply the material and construct the Green house / Net house / Poly house /Poly Tunnel at farmer's field according to the guideline prescribed
- ii.) If there will be amendments in guideline during the period of agreement by the National Committee on Plasticulture Applications in Horticulture (NCPAH) and the specification as prescribed in this Rate Contract Offer, the Supplier shall follow the same.
- iii.) The Supplier shall implement the project using material and components of minimum Indian standard prescribed or of the suggested companies only. The detail is given in **Annexure -5 (A to J)**. The type of polythene/net is to be used based on the crop selected by the farmer, however the quality criteria should fall with the minimum standard suggested in the guideline.
- v.) The Supplier shall construct the Green house/Poly house/Net house/Poly Tunnel within the time period set by Managing Director.
- vi.) The Supplier will take a trial run of the entire project and handover the same to farmer.
- vii.) The Supplier must handover, after commissioning of Green-house/ Net house/Poly Tunnel, a complete and updated "Operational Manual" in local language.

2 After Sales Services, Repair and Maintenance

- i.) The warranty period for the components / equipment shall be for three years from the date of completion of the project.
- ii.) The Supplier will provide after sales services for 3 years to the farmer.
- iii.) The Supplier will provide free replacement of component/equipment/cladding material if damaged during the warranty period.
- iv.) In the event of any instrument / component gets broken or damaged during installation and trial run at the site before handing over the Green house/Net house/Poly Tunnel to the farmer the Supplier shall replace the same at free of cost.

3 Agronomical Services

- i.) The Supplier shall provide operational training of minimum 15 days to the farmer or its nominated family member only.
- ii.) For the successful implementation of the project and to ensure envisaged benefits out of this project, the Supplier shall provide agronomy services related with Green house/ Poly-house/Net house/Poly Tunnel cultivation technology to the beneficiary. The duration of the agronomy services will be for three years after the project completion date.
- iii.) The agronomy services to be provided by the Supplier must include the advice for selection of crop, variety of seeds and other related agriculture inputs and also advise for taking best crop based on the prevailing market condition with an objective to maximize the earning of farmer. However, the decision regarding the selection of crop should be taken by farmer.
- iv.) During this period, a competent person deputed by the Supplier will pay visit at every fifteen days to the farmer from date of handing over the project and once in every two months during period of warranty. The supplier will provide details of competent person(including cell no) to farmer. The list of competent person along with detail of qualification and experience has to be provided to the Managing Director as per the format given in **Annexure -9**.
- v.) The Supplier will maintain records of such visit and submit the same to the Managing Director as and when required.

E. Terms of Reference for the applicant/offerer/supplier

- i.) Applicant can submit its credentials relevant to the eligibility criteria specified as per **Annexure-3**.
- ii.) The Rates fixed by the Corporation which is annexed as Annexure 6. If applicant is agreed to enter into an agreement with the Corporation on approved rates and fulfills the eligibility criterion as detailed in Annexure 3 may submit EOI. Submission of EOI shall be deemed to be accepted by the bidder of all the terms & conditions herein.

- iv.) The applicant irrespective of its rate contract shall not be granted approval for quantum of work in a year more than its average annual turnover of last three year indicated in its proposal up to the year ending on **March 31st, 2019**. The performance review would be done based on the quantum of work done, quality and no. of projects completed successfully in a year. Based on the performance review of the Supplier the Managing Director may extend the work limit.
- v.) The suppliers whose rates have been approved, shall have to demonstrate equipment's used in construction of protected cultivation. The farmer has a choice to select supplier. After selection of supplier, the information will be posted on MPFSTS portal and intimation to farmer to deposit farmer's share within 7 days.
- vi.) The subsidy shall be released by the Corporation after due verification of all the supplied items as per the technical specifications (Annexure 5a to 5J, as applicable) and fulfillment of terms & conditions specified in the work order issued by the Corporation.
- vii.) The Managing Director may levy a penalty on the supplier if found that supplied component are not conforming to minimum specifications. The cost of such component would be recovered from the bill of supplier or from the bank guarantee submitted for the particular project by supplier.
- viii.) The Supplier shall ensure the insurance of Green house / Shade net house / Poly house/ Poly tunnel from a reputed Insurance company just after completion of construction work for one year and will have to submit the insurance certificate to the farmer and to the Corporation also. The Supplier shall ensure to renew insurance further up to warranty period i.e. for second and third year too. The value of insurance in first year will be equal to the amount of billing and in subsequent years as per insurance company's norms. The cost of insurance has to be borne by Supplier.
- ix.) The Supplier should provide help to the farmer for settlement of insurance claim and assist in submitting prima facie report of the damages occurred within the scope of the insurance policy if required.
- x.) The Supplier shall not sub-contract the work of construction of green- house/net house/poly-house/poly tunnel to the associate dealer/distributor/other party. If Supplier is found to be sub-contracting the work of construction, the rate contract of such Supplier shall be cancelled by the Corporation including forfeiting of SD.
- xi.) The Corporation has right to cancel the rate contract at any point of time during the contract period.
- xii.) The Corporation has right to terminate Rate Contract if found that work carried out by Supplier is not satisfactory.
- xiii.) The work order for construction of green-house/poly-house/net-house/poly tunnel shall be issued by the Corporation to the supplier. The Corporation will carry out inspection through its nominated committee of the entire project as specified in **Annexure 5 (SATO 5J)**. On getting the inspection report and if the project is found as per the norms as mentioned in this EOI, payment will be released. Nominated

officer of the department/the Corporation shall visit & inspect the construction work from time for which separate instructions will be issued by the Department.

- xiv.) On receipt of information regarding completion of work, the same will be posted on MPFSTS portal and physical inspection will be carried out in presence of farmer by the nominated committee. Action for Geo-tagging will be made after inspection by the supplier.
- xv.) The subsidy shall not be released if the structure or any component is not as per the specification mentioned.

F. INSTRUCTION TO OFFERERS :

The EOI is invited in TWO ENVELOP SYSTEM from the offerers to participate in this EOI .The offerers are required to read carefully the terms and conditions and submit the documents as detailed in Annexure 2, only after affixing seal and signature on each and every page submitted along with 67 pages of this EOI documents and other relevant documents.

DOCUMNTS TO BE SUBMITTED IN ENVELOP "A"

Demand Draft of EOI fee and Earnest Money Deposit as mentioned on page 6.

DOCUMNTS TO BE SUBMITTED IN ENVELOP "B"

Each and every page (67 pages) of this EOI after affixing seal and signature on each and every page. Offerer must submit hard copies of complete technical bid including qualification criteria and related documents/technical literature/Boucher duly signed. Hard copies of these documents must be dropped in Tender drop box placed at Office of the Managing Director M P State Agro Industries Development Corporation Limited, 3rd floor of Panchanan Bhawan, Malviya Nagar, Bhopal, on the dates and time as mentioned on page 6.

Both the envelop should be kept in a sealed single envelop superscripting "Expression of Interest (EOI) for rate contract for supply and installation of protected cultivation infrastructures (Green house / Shade net house / Poly house/ Poly tunnel structure) and the name of the offerer with address.

Dy.General Manager {Horticulture}

List of Mandatory Documents to be enclosed in Envelop B

(Self-Certified with Seal and signature)

SN	TYPE OF DOCUMENTS
1	Copy of Valid registration as Supplier/ Manufacturer of Green house / Shade net house / Poly house/ Poly tunnel structure with Department of Horticulture and Farm Forestry Madhya Pradesh. OR Document as Supplier of Green House / Net House/ Walk in Tunnel Registration with DTIC or Udyog Aadhar.
2	Valid Permanent Account Number (PAN) attaché copy of PAN
3	Valid GSTN. Attach copy of Registration Number
4	Details of Approved rates Annexure 6
5	Affidavit as per Annexure 7
6	Applicant Company profile as per Annexure 8
7	CA Annexure 9
8	Work completed in last Three years Annexure 10
9	Work completed in last Three years under subsidy scheme Annexure 11
10	Details of Personals Annexure 12
11	Agreement on Rs 1000/- non judicial stamp paper duly signed by the authorized signatory Annexure 13
12	Authority to submit EOI Annexure 14
13	Undertaking Annexure 15
14	Page no 1 to 67 of EOI

ELIGIBILITY CRITERIA

The following are the minimum eligibility criteria for submission of offer

- a. An offerer should have valid registration as Supplier/ Manufacturer of Green House / Net House/ Walk in Tunnel with Department of Horticulture and Farm Forestry Madhya Pradesh.

OR

Documents as supplier/manufacturer of Green House/Net House/Walk in Tunnel, registration with DTIC or Udyog Aadhar will be considered.

- b. An offerer should have valid PAN & GSTN
- c. Minimum 03 (three) years of experience in the field of Green house/Polyhouse/Net house/Poly Tunnel in supply, installation and maintenance. The Supplier has to submit a CA certificate to establish experience of minimum three years and format given at Annexure 8
- d. The offerer should have Minimum Average Annual Turnover of Rs. 1.00 crore in the last 3 years (i.e. 2016-17, 2017-18 and 2018-19 from construction activity of greenhouse/net house/poly house/poly tunnel only. Nil Turnover in any of the above mentioned year will lead to disqualification. Annexure 9
- e. The offerer should have constructed at least 10 numbers of Green-house / Net house / Poly house / Poly Tunnel(40,000 sq mt) in last 3 years as on date 31st March 2019. Annexure 10

The offerer has to submit copy of all the relevant documents.

Dy. General Manager {Horticulture}

GENERAL TERMS AND CONDITIONS

01- PROCEDURE FOR EOI

- 1.1** The Corporation invites EOI for supply and installation of items as specified in **Annexure 5 (A-J) who fulfils** eligibility criterion as per **annexure 2 and 3**.
- 1.2 Not more than one offer will be accepted from any Applicant/ Manufacturer. If any individual participating in the offer, representing more than one firm in one or different names and it comes to our knowledge at any point of time, all such EOI will not be entertained and shall be liable for rejection.

02- AVAILABILITY OF EOI DOCUMENT (EOI)

The document is available on website www.mpagro.org of the corporation.

03- SUBMISSION OF EOI FOR RATE CONTRACT OFFER

- 4.1 The Corporation invites EOI for rate contract for supply and installation of Green-house / Poly house/ Net house/ Poly Tunnel.
- 4.2 All the Mandatory Documents are to be submitted (Self Certified with Seal and signature) as per list in **Annexure 2**.
- 4.3 Self-attested hard copies of all Mandatory Documents along with signed copy or EOI must be dropped in Tender drop box placed at Office of the Managing Director M P State Agro Industries Development Corporation Limited, III rd floor of Panchanan Bhawan, Malviya Nagar, Bhopal, before last date and time of submission of offer.
- 4.4 The Envelope of Hard Copies shall be submitted in a sealed cover super scribed with words "EOI for Rate Contract for supply and installation of Green house / Poly house/ Net house/ Poly Tunnel.

4. DOCUMENTS TO BE SUBMITTED IN ENVELOP "B"

- 4.1 All the documents as per Annexure 2
- 4.2 Hard Copies received in the offer box up to due date and time will be opened on due date and time as mentioned in page No 6.
- 4.3 The Corporation will not be responsible for any delay on any account in receipt of EOI. If the EOI is received after the specific date and time even if the delay in receipt was caused in postal transit or any other reason, whatsoever. EOI will be open on due date and time as mentioned in Annexure 1 point B in the presence of the representative of firms who wishes to be present.

05- EOI DOCUMENT

The Offerer is expected to read carefully all instructions, conditions of the EOI, Proforma agreement, Specifications, all annexure, Failure to comply with the requirements of offer submission will be at the offerer's risk. Offers that are not substantially responsive to the

requirements of the EOI documents will be rejected.

06- EARNEST MONEY DEPOSIT (EMD):

Offerer has to deposit required Earnest Money Deposit (EMD) of Rupees 5,00,000 (Five Lakh) by way of Demand Draft as mentioned on page 6.

- (i) Earnest Money of all unsuccessful Offerer will be returned. No interest is payable on the amount of EMD at the time of refund.
- (ii) Earnest Money shall be forfeited if the offer is withdrawn.
 - a. At any time prior to its rejection,
 - b. Before or after the acceptance is communicated to the Offerer.
 - c. If it is found that false, documents/ information are submitted.
- (iii) The EMD will remain with the Corporation till validity of agreement and/or till successful execution of all the order placed during the currency of the agreement and will be refunded to the supplier without interest in case of no dispute.
- (iv)- **Earnest money of successful Offerer will be adjusted against Security Deposit (SD) at the time of the execution of the agreement.**

07- SECURITY DEPOSIT (SD):

- (i) The Security deposit will remain with the corporation during the currency of the contract and will be refunded to the supplier without interest in case of no dispute.
- (ii) Security deposit will be forfeited in case of failure of supply of the material as mentioned in the purchase order, in time and as per the approved specifications or for any breach of terms and condition of the agreement and EOI.
- (iii) The security deposit will be refunded after the successful execution of all orders during currency of the contract period provided no dispute; claims or complaints exist for settlement without interest.

08- TECHNICAL SPECIFICATION:

Technical Specifications are given in Annexure 5 (5A to 5J). Supplier has to supply items as per the specifications.

09- QUOATING OF RATES FOR EOI FOR RATE CONTRACT:

No rates are to be quoted. Only those offerers should submit EOI who agrees to the rates as mentioned in Annexure 6

10- RESPONSIBILITY OF RATES:

The rates should be strictly in accordance with the clause mentioned below (applicable from the date of Submission of EOI).

- (i) The rate charged for Items under this contract by the offerer shall in no event exceed the lowest price at which the identical items to any other person /organization/ government department/ Govt. Corporation / or any Govt. body in M.P. during the period till completion of all orders issued during the currency of contract is completed.
- (ii) If at any time during the said period the Supplier reduces the sales price of such offered items or sells such items to any other person / organization at a price lower than the price chargeable under the contract, the Supplier shall forthwith notify such reduction in the rate to the Corporation. The price paid under the contract after such reduction in sale price, shall stand correspondingly reduced. The Corporation shall be entitled to recover such excess amount.

11- NEGOTIATIONS: No negotiation will be done.

12- VALIDITY OF APPLICATION: Application received against this EOI are valid for acceptance for 2 months from the last date of Submission.

13- VALIDITY OF RATE CONTRACT: The Rate Contract against this EOI is valid for F.Y. 2019-20 & F.Y. 2020-21(31-3-2021). The EOI can be extended after the expiry i:e 31.3.2021 till the new Rates are circulated after finalizing the New RCO/EOI in this regards. However this period will not be extended for more than one year i.e. up to 31.3.2022.

14- EXECUTION OF AGREEMENT:

- (a) The Applicant shall have to enclose an agreement as per **Annexure 13** along with EOI in original. The cost of the same will be borne by the Applicant.
- (b) The Corporation shall intimate the successful offerer regarding acceptance of his offer. EOI without agreement in original will not be entertained..

15- PLACEMENT OF ORDER:

1. The Managing Director at Head office /Regional Manager/District Manager of the Corporation shall place purchase order to the supplier.

16- SCHEDULE AND MODE OF SUPPLY / PAYMENT

1. The supplier has to supply and install the ordered Green house / Shade net house / Poly house/ Poly tunnel within 60 days from the receipt of order of the Corporation.
2. In special case, supplier may request in writing to Dy. Director/Asstt. Director Horticulture of the district (under intimation to district office of the Corporation) for extension in time limit mentioned above(in point 16.1) . On receipt of such request, Dy. Director/Asstt. Director Horticulture may extend time limit and inform in writing to supplier as well as to the Corporation.
3. If supplier has not executed work in time , penalty @ Rs 15/-- per sq. mt. will be

charged for delay of 15 days , @ Rs 30/-- per sq mt will be charged for delay of 30days and @ Rs 50/-- per sq mt will be charged for delay of 45 days and will be deducted from supplier's bill.

4. Failure on the part of the supplier for supply/installation, may lead to forfeiture of the Security Deposit, the rate contract shall stand cancelled, and agreement terminated.
5. If any dispute regarding the quality / quantity of the material supplied, the Corporation will make payment after settlement of the dispute only.

PAYMENT

1. On successful installation of protected cultivation infrastructure the payment shall be released on "Payment after Payment" basis. (i:e on receipt of payment from consignee the corporation will make 95% payment of invoice to supplier.
2. Remaining 5% payment will be released after completion of warranty i.e. 3 years from date of installation of protected cultivation infrastructure. Such amount may also be released, only if, supplier submits the Bank Guarantee of the equal amount valid for three years.

This Rate Contract offer will be valid upto 31-3-2021. In case of any extension of contract agreement, the supplier (the offerer with whom an agreement is signed by the Corporation) will have to revalidate bank guarantee for extended period will in advance.

Cultivator share under the Scheme will be deposited directly by the beneficiary in Corporation's account. The subsidy amount will be disbursed as per applicable rules.

17- WARRANTY

3 year warranty from the date of installation. The Supplier is responsible for damages, if any, due to Corrosion, Sunlight, manufacturing defect. etc.. In such cases the supplier will replace / repair such material on its own expenses within 10 days from the date of receipt of intimation. If the supplier fails to do so in the given time limit of 10 days, the department / beneficiary will be free to repair / replace the defective material from open market. The Corporation will be free to recover such expenditure whatsoever from pending payment / Security Deposit / Bank Guarantee (if applicable).

18- TRAINING:

Selected beneficiaries will be imparted one day training. During training, the supplier shall demonstrate items used in construction of protected cultivation infrastructure to the selected beneficiaries and beneficiaries.

19- AFTER SALE SERVICES:

The supplier shall be fully responsible for the satisfactory performance of the Green house / Shade net house / Poly house/ Poly tunnel structure for which supplier shall ensure prompt repair, maintenance and other after sale service during the warranty period of 3 years.

20. CONSULTANCY(Agronomy Services):

The supplier shall be fully responsible to provide technical consultancy (agronomy practices) for growing of the crops grown in Green house / Shade net house / Poly house/ Poly tunnel structure for at least one year without any extra charges. The supplier has to provide proper technical guidance to the beneficiaries regarding sowing/plantation, maintenance of crop application of fertilizer/pesticide, proper handling and harvesting packing.

- a. Supplier should arrange technical persons to visit the beneficiaries Green house / Shade net house / Poly house/ Poly tunnel structure at least once in every month for first six months from the date of completion.
- c. Once in every two months from 6th to 12th month from the date of construction. Date of visits may be decided as per mutual understanding of the beneficiaries and the supplier.

21- TESTING FOR QUALITY:

In case of any complaint from the beneficiary, 2 Samples of each components used in installation of protected cultivation infrastructures will be drawn by Department of Horticulture in presence of supplier's representative and beneficiary, which will sent to Government Laboratory and/or Laboratory accredited by NABL for testing, charges of such testing will be borne by supplier. The test report results will be final for all the purposes in this regards, what so ever may be. In case components found substandard in testing, the supplier will be penalized as decided by the Managing Director of the Corporation. In case if components found substandard, the supplier will be debar for further supplies for 3 years. The Security Deposited of the supplier will be forfeited.

22- FORCE MAJEURE CLAUSE: If any time during the currency of contract the performance in whole or in part by either party or any obligation under this contract shall be prevented /delayed by reasons of any war, hostility, acts of the public enemy, civil commotions sabotage, fire, floods, explosions, epidemics, quarantine, restrictions, strike. lockouts or acts of God (hereinafter referred to as eventualities) then neither party will be by way of such eventuality be entitled to terminate this contract nor shall have any claim for damages against the other in respect of such nonperformance or delay in performance (provided notice of the happening of any such eventualities is given by either party to the other within 21 days from the date of occurrence thereof) Deliveries under this contract shall be resumed as soon as practicable after such eventualities has come to an end or cease to exist.

23- Submission of EOI shall deem to be the acceptance by the Offerer of the all the terms and conditions contained herein.

24- The Managing Director of the Corporation reserves the right to accept or reject any or all the offers without assigning any reason whatsoever at any time prior to the award of the contract, without incurring any liability to the affected offerer and any obligation to inform the affected offerer of the grounds.

25- PURCHASE PREFERANCE: As per the policy of the State Govt. in respect of purchase of material for the use of Corporation purchase preference to the extent of 30% shall be

given to those Manufacturers who belong to the SC/ST category. A self certified photocopy of certificate issued by competent Authority.

26- INSPECTION:

The Managing Director may decide to inspect the Production / Quality Control Facilities of the offerer before or after the execution of agreement. If any time it is found that the information submitted by Offerer/Supplier is not according to the documents submitted the Managing Director reserves the right to reject the offer or terminate the agreement.

27- The Managing Director of The Corporation reserves the right to impose penalties at his discretion for breach of the terms and conditions (commensurate with the losses incurred) which may be forfeiture of SD and/or debaring the supplier for maximum period of 3 years to supply all materials, whatsoever may be.

29- Managing Director of the Corporation reserves the right to amend or replace or change any condition without any notice, if exigencies requires to do so.

30- In case of any amendments including extension of due date will be published on Corporation's website www.mpagro.org , only and no further notification will be made in the news paper. Accordingly interested bidders are advised to keep close watch on the Corporation's website in their own interest. It is also to be noted that any such amendments will be a part of the Documents and will be binding on the bidder and it will be presumed that the bidder has satisfied himself about such amendments

31- Arbitration: In case of any dispute arising between the supplier and Corporation the matter shall be referred to Deputy General Manager of the Corporation. In case the supplier is not satisfied with the decisions of Deputy General Manager, the matter shall be referred to the Managing Director of the Corporation who will act as sole arbitrator finally passes his verdict, which will be binding, to supplier and Corporation. In case the arbitrator is not the Managing director by the order of competent court , entire expenses for such arbitrator will be borne by the supplier only.

32- For all legal proceedings the district court Bhopal will have jurisdiction.

33- It is the discretion of the Managing Director of the Corporation to accept/reject the EOI without assigning any reason thereof.

Dy. General Manage {Horticulture}

Terminology used:

<u>NATIONAL COMMITTEE ON PLASTICULTURE APPLICATIONS IN HORTICULTURE (NCPAH)</u>
<p>Greenhouse - is a framed/inflated structure covered with a transparent/translucent material that allows sufficient sunlight to enter for the purpose of growing and maintaining the plants under partially and fully controlled conditions.</p>
<p>1. Air Circulation - The process of moving or mixing air within a greenhouse to control temperature, humidity and carbon dioxide distribution.</p>
<p>2. Column - A column providing the main structural support to individual frame member for a greenhouse that are spaced at regular intervals and set in concrete footings.</p>
<p>3. Curtain wall -The non-transparent lower portion of the side walls of a greenhouse.</p>
<p>4. Design load - The design load includes the weight of the structure {dead load}, loads {equipment, etc) associated with building use (live load) and loads from snow and wind</p>
<p>5. Energy curtains - automated system utilizing fabrics to insulate the greenhouse as per</p>
<p>6. the crop requirements (day/night).</p>
<p>7. Evaporative Pad - Refers to the wetted part of cooling system through which air is drawn by exhaust fan. Heat is extracted from air to evaporate water in pad thereby lowering the air temperature.</p>
<p>8. Even span - a basic style of greenhouse in which rafters are equal in length.</p>
<p>9. Fan-and-pad cooling system - a system in which large exhaust fans draw air through a moistened cellulose pad mounted on the opposite end of the structure.</p>
<p>10. Fan-tube ventilation - fans bring in small amounts of cool outside air and mix it with the warm air.</p>
<p>11. Fertilizer injector system - equipment used for the irrigation of plants with exact proportions of fertilizers obtained from a concentrate of water-fertilizer and water.</p>
<p>12. Fog-evaporative cooling system - fog is generated inside; as the minute fog droplets</p>
<p>13. evaporate, heat is absorbed.</p>
<p>14. Foundation - Foundation is the structural element between the greenhouse super structure and the ground; It must safely transfer gravity, uplift and overturning loads to the ground such as those from snow, crops, and wind.</p>
<p>15. Glazing - It is the transparent or translucent material glass or plastic, used to cover the greenhouse which transmits the desired amount of insolation to the growing area in the greenhouse.</p>
<p>16. Gothic arch - basic style of greenhouse with a pointed arch; trusses have been eliminated.</p>
<p>17. Gutter - In a multi-span greenhouse it is the lowest portion of the roof construction generally shaped in the form of a wide channel to drain off rain water and to permit people walking on it for maintenance.</p>

18. **Gutter**- Connected Greenhouse-A series of two or more single span greenhouses joined together at the cave by a drain gutter. Interior walls are usually eliminated.
19. **Intermittent mist system** - watering method; tiny droplets delivered periodically keep plants moist.
20. **Life of Glazing Material** -The period for which a glazing material will retain most of its transmission qualities, optical and physical properties when continually exposed to naturally occurring weather elements.
21. **Light Transmittance** - The ratio of the light passing through a glazing material to the light incident upon it.
22. **Mechanical Ventilation** - Desirable air exchange which occurs through controlled openings when fans are used to move air into and exhaust air out, of the greenhouse. Fans may be located either at the inlet end (positive pressure) or the exhaust end (negative pressure); however, the most common location is the exhaust end.
23. **Multi Span Greenhouses** - A type of greenhouse construction where individual houses are combined at the gutters, usually to form one open area under the entire roof Gable shape, saw tooth or curved roof greenhouses are found economical for large areas of 500 to 10000 m² under commercial cultivations. They are also called ridge and furrow greenhouses.
24. **Natural Ventilation** ~ Desirable air exchange which occurs in response to temperature and pressure variations inside and outside the greenhouse. These variations are created and maintained by solar energy, internal heat sources, and/or wind.
25. **Nets** - Is a UV stabilized knitted fabrics structure made of Polyethylene/ Polypropylene in the form of tape or monofilament that block certain amount of light.
26. **Orientation** - Refers to the positioning of greenhouses in such a way so that maximum winter light is transmitted to the plants. For greenhouses above 40°N latitude the ridge in either an individual greenhouse or a gutter connected range should run east-west. The potential for uneven growth in some plants because of gutters shading the same area during each day must be balanced against general reduction in winter light, if ridges run north-south.
27. **Overhead watering** - water is applied over the canopy of the plants with spray nozzles.
28. **Polyethylene films** - a petroleum-based flexible plastic used for cladding the greenhouse.
29. **Purlin** - A component of the greenhouse frame running the length of the greenhouse which connects the trusses together, adding more structural strength.
30. **Quonset** - basic style of greenhouse with curved roof with or without sidewalls
31. **Rafter** - A frame component spanning the space between the cave and the ridge.
32. **Ridge** - The highest part of the roof of a greenhouse usually forming a major structural component of greenhouse.

- 33. Ridge and Furrow Greenhouse** - A ridge and furrow greenhouse is a structure that consists of a number of greenhouses connected along the length of the houses. The shared side walls create a large interior space.
- 34. Rigid structured sheet** - a type of covering used in greenhouses commonly made of polycarbonate and acrylic; it is rigid and resistant to weathering.
- 35. Short-day curtains** - automated system utilizing fabrics to insulate the greenhouse as per the crop requirements (day/night).
- 36. Trusses** - composed of rafters, chords, and struts that support the roof.
- 37. Ultra-Violet (UV) stabilization** - The plastic covers being susceptible to photo degradation, both polyethylene and vinyl films are affected by ultra-violet light. They become brittle and tear when exposed to solar radiation. Stabilizers are mixed to make polyethylene UV Stabilized.
- 38. Uneven span** - basic style of greenhouse in which rafters are of unequal length.
- 39. Ventilation Rate** - The volume of air exchanged per unit time per unit floor area. Ventilation rate is often expressed as $m^3/s.m^2$ of greenhouse floor area (alternatively, as internal air volume changes per unit of time).
- 40. Ventilation** - The process of exchanging air inside the greenhouse with outside air to control greenhouse temperature, humidity, oxygen and carbon dioxide levels.
- Ventilators** - moveable units of a greenhouse to allow for natural air flow
- 42. Weather ability** - It is the resistance of a greenhouse glazing material to degradation due to weather effects.

Annexure 5 B

SUGGESTIVE TECHNICAL SPECIFICATIONS OF GREENHOUSE/ POLYHOUS/ NET HOUSE AND WALK IN TUNNEL.

1. NATURALLY VENTILATED GREENHOUSE (TYPE-I)

Sr. No.	Items	Description/Specifications
1	Product	Naturally Ventilated Greenhouse
2	Size	500 m ² /1000 m ² /2000 m ² /4000 m ²
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6.5m to 7m depending upon the climatic conditions and wind
5	Ridge Vent	1m - 1.2m opening fixed with 40 mesh insect Net. Provision should be kept to close the vent with plastic film with manual mechanism for opening & closing the vent. However, if the farmer wants the motorized operation of the same, the Supplier should implement the same on charging additional cost
6	Gutter height	4m - 4.5m from floor area
7	Gutter slope	2% slope need be provided in civil foundation work/ structure
8	Gutter frame	16 gauge or 1.2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint having provision of rain water harvesting system
9	Structural design	The structural design need to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m ² There should be provision for opening one portion at either side for entry of small tractor/power tiller for intercultural practices
10	Structure	Complete structure made of galvanized steel tubular pipes /C- channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 3.2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2.9 mm thick
	Trusses member/Top arches	48 mm OD, 2.9 mm thick
	Purlins	Top purlins 48/42 mm OD, 2.6 mm thick
	Purlins member& others Foundations	33/25 mm, 2.3 mm thick Insert GI pipes of minimum 60 mm with 2.9 mm thick to have foundation depth of 75 mm with 3.2mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120 GSM).

11	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m (L x W x H) need be provided, covered with 200 micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2m width & 2.5 m height double leaf made in plastic/FRP (fibre reinforced plastic) sheets mounted in suitable frame.
12	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti- virus, UV blocking and also having minimum 80% level of light transmittance.
13	Fixing of cladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtain top. Wooden batons or PVC grippers need not be used for fixing the cladding materials.
14	Spring Insert	Zigzag high carbon steel spring action wire of 2-3 mm diameter must be inserted for fixing shade net into Aluminum Profile.
15	Curtains and insect screen	Roll up UV stabilized 200 micron transparent plastic film as curtains need be provided up to 3.5 m height on all sides having Manual operated crank mechanism for opening and closing of curtains. However, if the farmer wants the motorized operation of the same, the Supplier should implement the same on charging additional cost. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains, Anti-flapping strips are suggested to ensure smooth functioning of the curtain
16	Shade Net	Use UV stabilized Mono Tap of 50% shade factor with motor operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
17	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories. Provision for micro sprinklers need be kept for top of the vents of the greenhouse (Applicable only BIS standards for all irrigation components as well as water tank).
18	Footpath	not required
19	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).

Note:

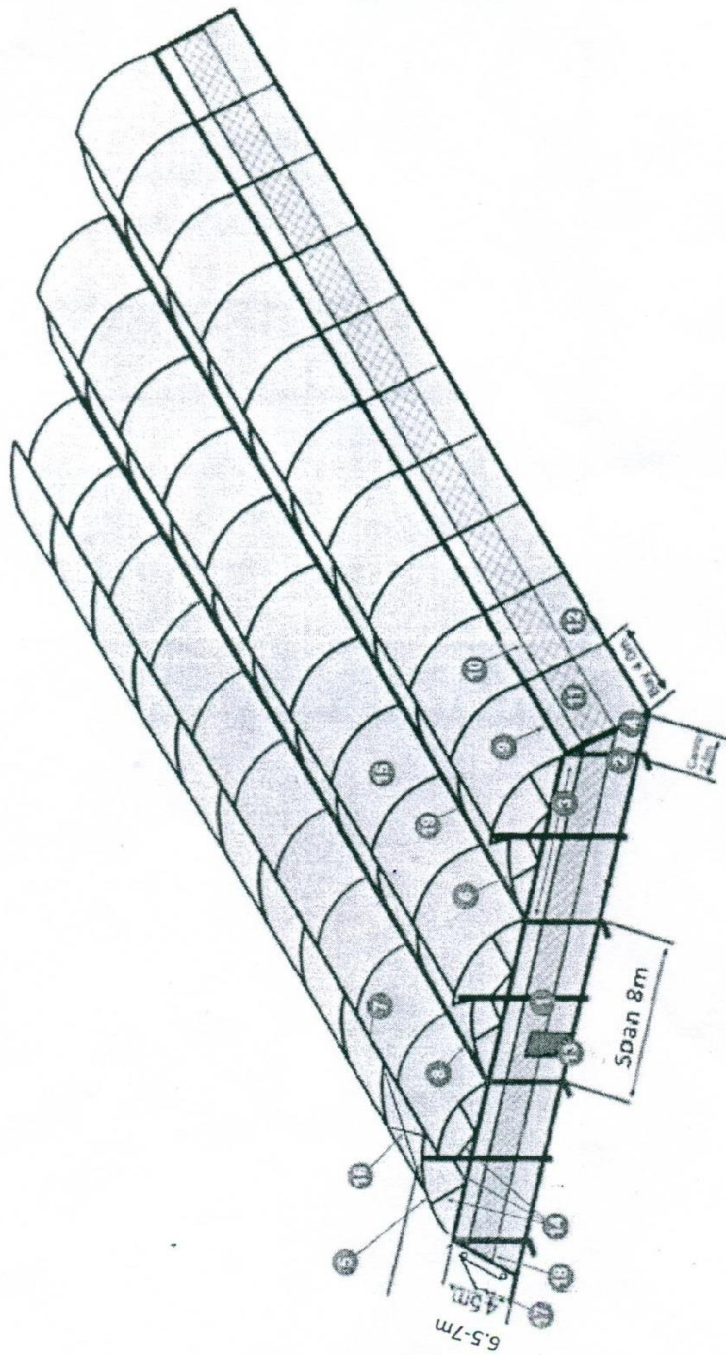
- In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profil. However the cost of the apron should be computed on the basis of material used.
- Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr.

Annexure 5 C

NATURALLY VENTILATED GREENHOUSE (Type-2) 2mm thickness of structural		
Sr. No.	Items	Description/Specifications
1	Product	Naturally Ventilated Greenhouse
2	Size	500 m ² /1000 m ² /2000 m ² /4000 m ²
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6.5m to 7m depending upon the climatic conditions and wind
5	Ridge Vent	1m - 1.2m opening fixed with 40 mesh insect Net. Provision should be kept to close the vent with plastic film with manual mechanism for opening & closing the vent. However, if the farmer wants the motorized operation of the same, the Supplier should implement the same on charging additional cost.
6	Gutter height	4m - 4.5m from floor area
7	Gutter slope	2% slope need be provided in civil foundation work/ structure
8	Gutter frame	16 gauge or 1.2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint having provision of rain water harvesting system.
9	Structural design	The structural design need to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m ² . There should be provision for opening one portion at either side for entry of small tractor/power tiller for intercultural practices.
10	Structure	Complete structure made of galvanized steel tubular pipes /C-channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2 mm thick
	Trusses member/Top arches	48 mm OD, 2 mm thick
	Purlins	Top purlins 48/42 mm OD, 2 mm thick
	Purlins member & others	33/25 mm, 2 mm thick
	Foundations	Insert GI pipes of minimum 60 mm with 2 mm thick to have foundation depth of 75 mm with 2mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120 GSM).

11	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m (L x W x H) need be provided, covered with 200 micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2m width & 2.5 m height double leaf made in plastic/FRP (fibre reinforced plastic) sheets mounted in suitable frame.
12	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS 15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti-virus, UV blocking and also having minimum 80% level of light transmittance.
13	Fixing of cladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtain top. Wooden batons or PVC grippers need not be used for fixing the cladding materials.
14	Spring Insert	Zigzag high carbon steel spring action wire of 2-3 mm diameter must be inserted for fixing shade net into Aluminum Profile.
15	Curtains and insect screen	Roll up UV stabilized 200 micron transparent plastic film as curtains need be provided up to 3.5 m height on all sides having Manual operated crank mechanism for opening and closing of curtains. However, if the farmer wants the motorized operation of the same, the Supplier should implement the same on charging additional cost. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains, Anti-flapping strips are suggested to ensure smooth functioning of the curtain.
16	Shade Net	Use UV stabilized Mono tap of 50% shade factor with motor operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
17	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories. Provision for micro sprinklers need be kept for top of the vents of the greenhouse (Applicable only BIS standards for all irrigation components as well as water tank).
18	Footpath	not required
19	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p>Note: In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profil. However the cost of the apron should be computed on the basis of material used</p> <p>Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr</p>		

National Committee on Plasticulture Applications in Horticulture (NCPAH)



- | | | |
|---------------------|--------------------------------|--------------------------------|
| 1. Main column | 2. 2 nd main column | 3. Bottom cord |
| 4. Corridor | 5. Long arch | 6. Small arch |
| 7. Top purlin | 8. Gutter | 9. Side purlin |
| 10. Corridor purlin | 11. Insect net | 12. Apron |
| 13. Door | 14. Brassing | 15. UV stabilized Plastic film |
| 16. Cross brassing | 17. Curtain handle | 18. Corridor support |
| 19. Gutter purlin | | |

Annexure 5 D

SUGGESTIVE TECHNICAL SPECIFICATION OF GREENHOUSE WITH FAN AND PAD (EVAPORATIVE) COOLING SYSTEM (Type-1)		
Sr. No.	Items	Description/Specification
1	Product	Greenhouse with Fan & Pad cooling system
2	Size	500 m ² /1000 m ² /2000 m ² /4000 m ²
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6 m to 6.5 m depending upon the climatic conditions and wind
5	Gutter height	4m - 4.5m from floor area
6	Gutter slope	2% slope need be provided in civil foundation work/ structure
7	Gutter material	20 gauge or 2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint
8	Structural design	The structural design need to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m ² . There should be provision for opening one portion at either side for entry of small tractor/power tiller for intercultural practices.
9	Structure	Complete structure made of galvanized steel tubular pipes /C-channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 3.2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2.9 mm thick
	Trusses member/Top arches	48 mm OD, 2.9 mm thick
	Purlins	Top purlins 48/42 mm OD, 2.6 mm thick
	Purlins member & other	33/25 mm, 2.3 mm thick
	Foundation	Insert GI pipes of minimum 60 mm with 2.9 mm thick to have foundation depth of 75 mm with 3.2mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120 GSM).
10	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m { L x W x H } need be provided, covered with 200 micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2m width & 2.5 m height double leaf made in plastic/FRP (fiber reinforced plastic) sheets mounted in suitable frame.
11	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS 15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti-virus, UV blocking and also having minimum 80%

		level of light transmittance.
12	Fixing of cladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtain top. Wooden batons or PVC grippers need not be used for fixing the cladding materials.
13	Spring insert	<i>Zigzag</i> high carbon steel spring action wire of 2-3 mm diameter must be inserted for fixing shade net into Aluminum Profile.
14	Co-axial fan	Co - axial fan (ISI mark) of minimum 1200 mm diameter containing 6 numbers of GI sheet blades, mounted in a GI frame followed by aluminum louver.
15	Cellulose pad for cooling	Cellulose pad of thickness 4" - 6" thick, height: 5'-6', width as desired equipped with Anodized Aluminum frame with necessary fittings and fixtures for its operation.
16	Circular pump with accessories for cooling pad	Circular pump with required capacity & accessories to be provided for wetting & circulating the pad area.
17	Digital controller with sensory devices	The necessary digital controller with sensory device & accessories of standard quality should be provided to operate the fan & pad system to control temperature & humidity inside the Greenhouse, the fabricator should ascertain the same.
18	Electric wiring inside greenhouse	Use copper wire to withstand desired load of required electrical gadgets/appliances with ISI mark.
19	Net	UV stabilized 50% with motor and manually operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
20	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PV C pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories. Provision for micro sprinklers need to be kept for top of the vents of the greenhouse Applicable only BIS standards for all irrigation components as well as (water tank).
21	Footpath	Not required.
22	Curtain wall/Apron	Suitable plastic sheet should be provided as apron
Note: <i>Optional items-Provision to be made for opening & closing of ventilation system in case of power failure</i>		
23	Curtains and insect screen	Roll up UV stabilized 200 micron transparent plastic film as curtains need be provided upto 3.5 m height on all sides having motor operated crank mechanism for opening and closing of curtains However, provision for manual opening and closing of curtains need also be provided in case of no power. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains. Anti-flapping strips are suggested to ensure smooth functioning of the curtain
24	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute of quality assurance (if required).
Note: <i>*In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profile. However the cost of the apron should be computed on the basis of material used.</i>		
Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph		

flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr.

4. SUGGESTIVE TECHNICAL SPECIFICATION OF GREENHOUSE WITH FAN AND PAD (EVAPORATIVE) COOLING SYSTEM (Type-2)- 2mm thickness of structural members		
Sr.No.	Items	Description/Specification
1	Product	Greenhouse with Fan & Pad cooling system
2	Size	500 m ² /1000 m ² /2000 m ² /4000 m ²
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6 m to 6.5 m depending upon the climatic conditions and wind
5	Gutter height	4m - 4.5m from floor area
6	Gutter slope	2% slope need be provided in civil foundation work/structure
7	Gutter material	20 gauge or 2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint
8	Structural design	The structural design need to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m ² . There should be provision for opening one portion at either side for entry of small tractor/power tiller for intercultural practices.
9	Structure	Complete structure made of galvanized steel tubular pipes /C-channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2 mm thick
	Trusses member/Top arches	48 mm OD, 2 mm thick
	Purlins	Top purlins 48/42 mm OD, 2 mm thick
	Purlins member & other	33/25 mm, 2 mm thick
	Foundation	Insert GI pipes of minimum 60 mm with 2 mm thick to have foundation depth of 75 mm with 2 mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120GSM).
10	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m { L x W x H } need be provided, covered with 200 micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2m width & 2.5 m height double leaf made in plastic/FRP (fiber reinforced plastic) sheets mounted in suitable frame.
11	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS 15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti-virus, UV blocking and also having minimum 80% level of light transmittance.

12	Fixing of cladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtain top. Wooden batons or PVC grippers need not be used for fixing the cladding materials.
13	Spring insert	Zigzag high carbon steel spring action wire of 2-3 mm diameter must be inserted for fixing shade net into Aluminum Profile 6
14	Co-axial fan	. Co - axial fan (ISI mark) of minimum 1200 mm diameter containing numbers of GI sheet blades, mounted in a GI frame followed by aluminum louver.
15	Cellulose pad for cooling	Cellulose pad of thickness 4" - 6" thick, height: 5'-6', width as desired equipped with Anodized Aluminum frame with necessary fittings and fixtures for its operation
16	Circular pump with accessories for cooling pad	Circular pump with required capacity & accessories to be provided for wetting & circulating the pad area.
17	Digital controller with sensory devices	The necessary digital controller with sensory device & accessories of standard quality should be provided to operate the fan & pad system to control temperature & humidity inside the Greenhouse, the fabricator should ascertain the same.
18	Electric wiring inside greenhouse	Use copper wire to withstand desired load of required electrical gadgets/appliances with ISI mark.
19	Net	UV stabilized 50% with motor and manually operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
20	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, Non Return Valve Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories. Provision for micro sprinklers need be kept for top of the vents of the greenhouse (Applicable only BIS standards for all irrigation components as well as water tank).
21	Footpath	Not required
22	Curtain wall/Apron	Suitable plastic sheet should be provided as apron
Note: <i>Optional items-Provision to be made for opening & closing of ventilation system in case of power failure</i>		
23	Curtains and insect screen	Roll up UV stabilized 200 micron transparent plastic film as curtains need be provided up to 3.5 m height on all sides having motor operated crank mechanism for opening and closing of curtains However, provision for manual opening and closing of curtains need also be provided in case of no power. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains. Anti-flapping strips are suggested to ensure smooth functioning of the curtain
24	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute of quality assurance (if required)
Note: <i>*In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profile. However the cost of the apron should be computed on the basis of material</i>		

used.

- Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr.

Annexure 5 F

5. SUGGESTIVE TECHNICAL SPECIFICATIONS OF NET HOUSE (Type-1)		
Sr.No.	Particulars	Descriptions/Specifications
1	Product	Flat roof net house/ Gable roof net house
2	Size	500 sqm./1000 sqm/2000 sqm/4000 sqm/ (Bay size 4 x 4 m for Gable/parabolic roof and 6 x 4 m / 6 m x 6 m for others)
3	Height	4-4.5 m from floor area. If gable roof, the side height should be in between 3 m - 3.5 m and Centre height 4 m - 4.5 m.
4	Structural design	The structural design must withstand wind speed of minimum 130 km/hr. and withstand crop load up to 25 kg/m ² crop load. The structure must have the provision for opening one portion at either side for entries of small tractor/ power tiller for inter-cultural operations. The aerodynamics shape should be preferred to avoid wind load.
5	Structure	Complete structure should be made of galvanized steel tubular pipes or equivalent section of light class conforming Indian Standards IS: 1161-1998, the structural member should be joined with fasteners properly.
6	Columns	60 mm OD, 2.9 mm thick
	Trusses, purlins and hockey Member for Truss, purlins & others	48 mm OD, 2.9 mm thick 42 mm OD, 2.6mm thick
7	Entrance room & Door	Two entrance room of size 2.5 m x 2.5 m x 2.5 m(L x W x H)made of GI square pipe size 38mm x 38 mm having minimum wall thickness 2.6 mm or Aluminum profile need to be provided and covered with UV stabilized net. Two hinge lockable doors of size 2.5 m width & 2.5 m height double leaf made in plastic/FRP sheets mounted in suitable strong frame
8	Cladding material	UV stabilized shade net having 50 % shading factors having minimum wt. of 70-80 GSM . The selection of shade net colour depends on the selection of crops. For insect net house GSM should be minimum 120 , of 40-50 mesh size insect net, may be used to cover the structure.
9	Fixing of cladding materials	All ends/joints of net house to be fixed with two way aluminum profile with suitable locking arrangement such as zigzag high carbon steel with spring action wire of 2-3 mm diameter. Wooden batons or PVC grippers must not be used.
10	Civil work	Depth of foundation need be kept at 60 mm or more depending upon soil type and prevailing wind conditions. GI pipes of 48 mm light class conforming to Indian Standards IS: 1161-1998 or equivalent sections should be grouted in cement concrete mixture with 1:2:4 ratios.
11	Floor	-
12	Plinth	1 feet plinth protection around the structure
13	Drip irrigation	Drip irrigation system inside greenhouse need to be selected based on

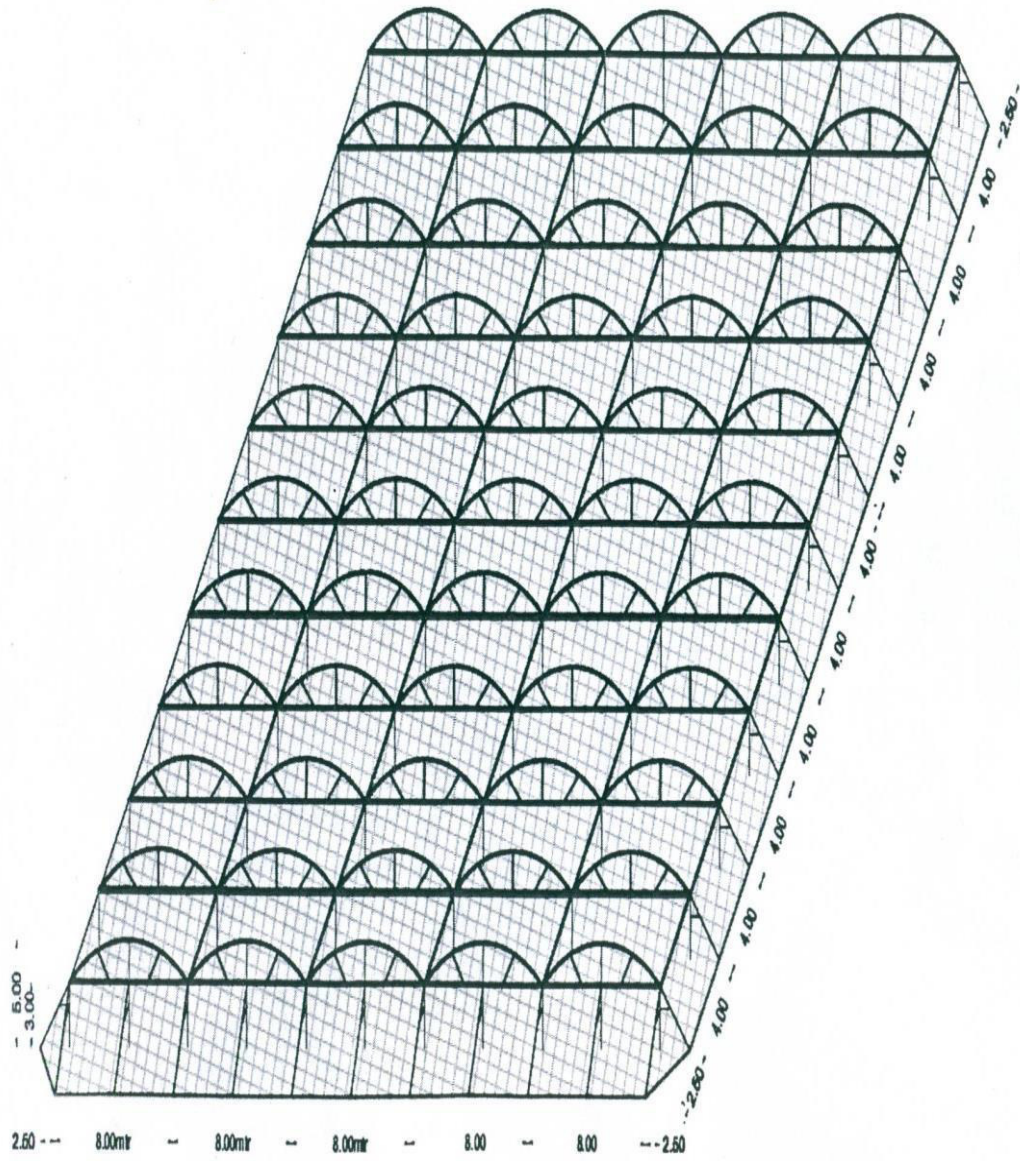
	System with fogging & misting facility	crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves Bypass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories (applicable only BIS standards for all irrigation components as well as water tank).
14	Footpath	Not required
15	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p>Note: Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr</p>		

Annexure 5 G

SUGGESTIVE TECHNICAL SPECIFICATIONS OF NET HOUSE (Type-2)- 2mm thickness of structural members		
Sr.No.	Particulars	Descriptions/Specifications
1	Product	Flat roof net house/Gable roof net house
2	Size	500 sqm./1000 sqm/2000 sqm/4000 sqm (Bay size 4 x 4 m for Gable/parabolic roof and 6 x 4 m / 6 m x 6 m for others)
3	Height	4-4.5 m from floor area. If gable roof, the side height should be in between 3 m - 3.5 m and Centre height 4 m - 4.5 m.
4	Structural design	The structural design must withstand wind speed of minimum 130 km/hr. and withstand crop load up to 25 kg/m ² crop load. The structure must have the provision for opening one portion at either side for entries of small tractor/power tiller for inter-cultural operations. The aerodynamics shape should be preferred to avoid wind load. W support should be provided to strengthen arch frame
5	Structure	Complete structure should be made of galvanized steel tubular pipes or equivalent section of light class conforming Indian Standards IS: 1161-1998, the structural member should be joined with fasteners properly.
6	Columns	60 mm OD, 2 mm thick
	Trusses, purlins and hockey Member for Truss, purlins & others	48 mm OD, 2 mm thick 42 mm OD, 2 mm thick
7	Entrance room & Door	Two entrance room of size 2.5 m x 2.5 m x 2.5 m(L x W x H)made of GI square pipe size 38mm x 38 mm having minimum wall thickness 2.6 mm or Aluminum profile need to be provided and covered with UV stabilized net. Two hinge lockable doors of size 2.5 m width & 2.5 m height double leaf made in plastic/FRP sheets mounted in suitable strong frame.
8	Cladding material	UV stabilized shade net having 50 % shading factors having minimum wt. of 70-80 GSM. The selection of shade net colour depends on the selection of crops. For insect net house GSM should be minimum 120, of 40-50 mesh size insect net, may be used to cover the structure.
9	Fixing of cladding materials	All ends/joints of net house to be fixed with two way aluminum profile with suitable locking arrangement such as zigzag high carbon steel with spring action wire of 2-3 mm diameter. Wooden batons or PVC grippers must not be used.
10	Civil work	Depth of foundation need be kept at 60 mm or more depending upon soil type and prevailing wind conditions. GI pipes of 48 mm light class conforming to Indian Standards IS: 1161-1998 or equivalent sections should be grouted in cement concrete mixture with 1:2:4 ratios.
11	Floor	-
12	Plinth	1 feet plinth protection around the structure

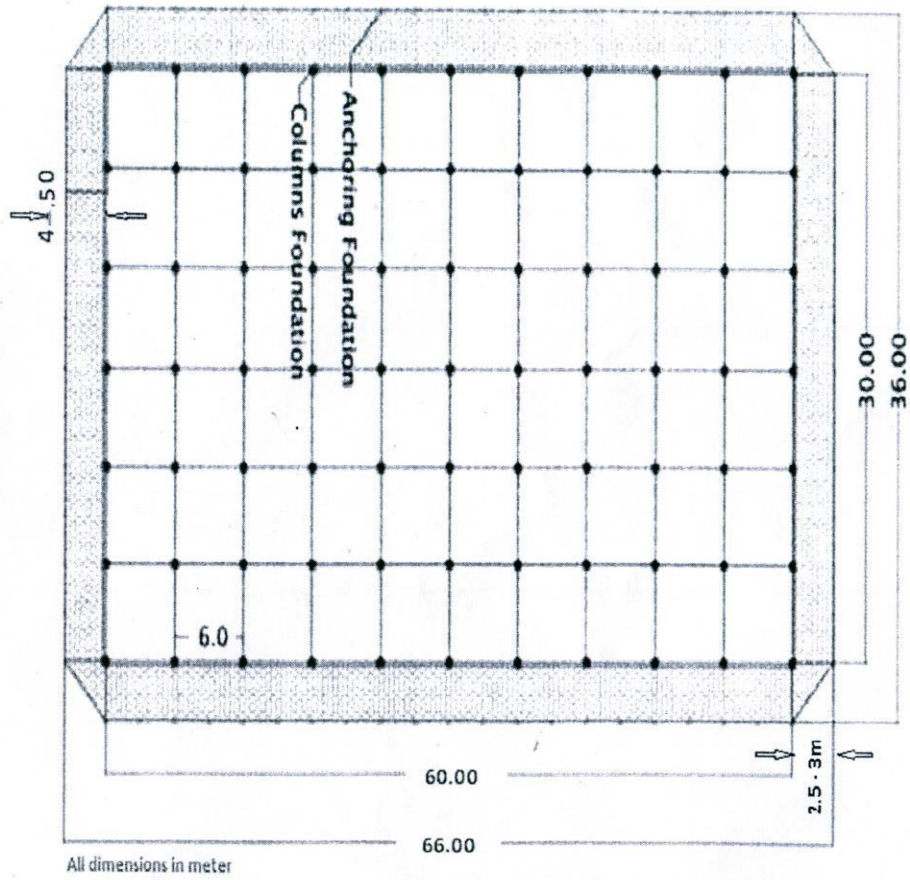
13	Drip irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, Bypass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories (applicable only BIS standards for all irrigation components as well as water tank).
14	Footpath	Not required
15	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p>• Note: Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm², valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3 mm/hr.</p>		

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Gable/parabolic roof type Shadenet house

National Committee on Plasticulture Applications in Horticulture (NCPAH)



Flat roof type Shadenet house

Note: The suggestive technical specifications can be modified wrt agro- climatic conditions, locations etc. However the cost per square varies with the type of structure.

7. Suggested technical specifications of poly tunnels:		
Sr. No.	Item	Indicative Specifications
I	Structures: Structure should withstand to 120 km/hour wind velocity, without weld.	
1.	Main Column	Tubular structure: Size 48 OD, Thickness 2.0 mm, Length- 4 m, or Square Closed Pipe structure: Size 40 mm × 40 mm, thickness 2.0 mm, Length- 4 m; Made up of Hot dip galvanized having minimum 300 GSM Zinc galvanizing
2.	Purlins	Tubular structure: Size 33/32 OD, Thickness 2.0 mm, length- 4 m, Channel/Square Closed Pipe Structure: Size 37 mm, thickness 1.8 mm, Length-4 mm Made up of Hot dip galvanized having minimum 300 GSM Zinc galvanizing
3.	Trusses	Tubular structure: Bottom horizontal 42/43 mm OD/2.0 mm thick, top chords and truss members 32 mm OD 2.0 mm thick, Bracing 25 mm OD/2.0 mm thick. Channel/Square Closed Pipe Structure: Bottom horizontal 40 mm × 20 mm/2.0 mm thick, top chords, truss & bracing members 37 mm × 37 mm/1.8 mm thick. Made up of Hot dip galvanized having minimum 300 GSM Zinc galvanizing
4.	Height	Centre height 4.5 meter, dome type structure.
5.	Profile	C type Aluminum/GI profile to fix plastic film to the structure by means of self-tapping screws. Weight of aluminum/GI profile is 200-220/400-450 GSM.
6.	Spring Insert	Zigzag spring insert to fix shade net to Aluminum profile 2.3 mm diameter of spring wire with cold galvanization/enamel coated. Wire
7.	Side wall curtain	1.5 meter & above with rolling flap of poly film 200 micron thick, U.V. stabilized, diffused, thermic, anti-drip and anti -dust made up of multi layer plastics. All the sides, 40-50 mesh uv stabilized white insect net having minimum 120 gsm
8.	Bottom apron	Woven polythene 160 GSM/200 micron plastic sheet, UV stabilized, 0.50 mtr. Height
9.	Entrance	Double doors, Polycarbonate sheet door with 2 m width and 2 m height and another door of 1 m × 2 m Box section frame is embedded inside for the strength.
II	Film & Nets	
1.	Poly film	200 micron thick, U.V. stabilized, diffused, thermic, anti-drip and anti-dust made up of multi layer plastics conforming Plastics films conforming Indian Standards (IS 15827: 2009).
2.	Insect Proof Net	40-50 mesh and white in colour on both sides of ventilation portion. Gsm 120 ; VU stabilized
III.	Trellis System	Support Up to 30 kg/m hanging load. thick GI wire, 2 mm main wire to the plant and 4 mm cross wire to support the trellis system The GI Wire shall move parallel as per the design and orientation of structure. The plant support wire should be parallel and above the plantation bed-to and fro, 120 cm apart or as per bed width.

IV	Civil Works	
1.	Foundation	Columns area fitted over gr insert pipe of 3.0 mm thickness. Length of insert 1/10 meter, PCC of CM ratio 1:2:4 of 40 cm × 40 cm × 100 cm sizes & filling the pit with 1:2:4 concrete mixed with appropriate grade cement. It is clarified that in case of round filling the diameter of foundation will be 40 cm.
V	Drip Irrigation System with fogging & misting facility	Drip irrigation system under poly tunnel should match design on spacing 30cm x 30 cm along with fogging facilities. Assembly with manifold, PVC pipe 63 mm/6 kg cm ² , PVC pipe 50 mm/6 kg/cmsq, PE plane lateral 16 mm, Emitting pipe lateral 16mm- @0.30 m spacing, hanging type micro sprinkler nozzle (four-way take off assembly) for very fine water particles (anti leak foggers) to be fixed in PE pipe of diameter 16mm, Water tank of capacity 500 liter and fittings & all necessary accessories also 10 HP submersible three phase motor should be provided. Roof Sprinkler System to wash the plastic film with uniform overlapping
General terms and conditions for construction of different structures:		
	<ol style="list-style-type: none"> 1. The installation of micro Irrigation system should be through the firms registered with the Corporation. 2. Area of structure means cultivable area/useful area for cultivation. 3. Rain Water Harvesting –Gutter should be provided with funnel and plastic PVC pipe from top to the bottom for rain water harvesting 	

LIST OF COMPONENT, INDIAN STANDARDS AND INDICATIVE SUPPLIER OF MATERIAL			
Sr.	Component	Minimum Standard/specification to be followed	Name of Comp
1	GI Pipes	IS 1161:1998 however 2 mm thickness of pipes can be allowed only for Type-2 structures	1. Tata Structures, 2. Jindal Pipes Ltd., Mumbai 3. Asian Tubes Ltd., Gujarat 4. Swastik Pipes Ltd., Ahmedabad 5. Surya Roshni Ltd. New Delhi 6. Bhusan Power & Steel Ltd., UP. 7. APL Apollo Tubes, Gujarat 8. JTL Infra Ltd., Delhi 9. GI Pipes India Ltd., UP.
2	Polythene	IS 15827:2009 <i>Refer Note- 3</i>	1. Ginegar, Israel 2. Politive 3. Agripolyane, France 4. PlasticaKritis , (mkted by SPA Banglore) 5. Hyplast, Belgium 6. Essen Multipack Ltd, Rajkot
3	Shade Net/ Agri Net	IS 16008: 2012	<i>Refer Note-1</i>
4	Insect Net	<i>Refer Note-2</i>	
(II)	Clamps	As per the prescribed guideline and the clamps to be used should be galvanised	GI sheet to be used for clamps should be made from IS standard material to be sourced from: 1. TATA shaktee, Kolkata 2. JSW Steel, Mumbai 3. SAIL, New Delhi 4. Asian Tubes Ltd, Gujarat 5. Bhushan Steel, New Delhi
(III)	Brackets & cleats	As per the prescribed guideline for design	
	Foundation	As per the prescribed guideline for design	Cement to be sourced from: 1. Ambuja Cements Ltd. 2. Siddhi, Cement Ltd. 3. Ultratech Cement Ltd. 4. J K Lakshmi, 5. Sanghi Cement Ltd. 6. Binani Cement Ltd. 7. Birla Corporation 8. JK cement 9. JP cement etc.

7	Micro Irrigation System and component	To be sourced from Agencies empanelled with GGRC.	7
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1. *Note-1:* For Shade Net and Agri Net majority of the companies are manufacturing the goods as specified in the IS standard, it is learnt that few manufacturers have started process for getting IS standard for their products. At present following Indian companies are having good presence in Domestic market CTM Agrotech, Rishi Tectex, TuflexIndia, Neocorp International Ltd., Essen Multipack Ltd., Satva Agrishade Net, Kasturi Agro Net, Kwality Nets, Agro net, etc. There are few Importers/Traders who are supplying Shade net/Agri net/Insect net of International Standard in India. The foreign companies such as Polysack, Growell, Meteor Agriculture Nets, etc. are represented by its dealers in the country.

2.

3. *Note-2:*

Insect Net Specifications				
Mesh	GSM	Yarn Diameter	Knitting Grid	U.V. Life
50 Mesh	130	0.24 mm	50 x 24	5 Yrs
40 Mesh	120	0.24 mm	40 x 24	5 Yrs
25Mesh	130	0.28 mm	25 x 24	5 Yrs

• Variance (+-) range of 3 to 5% in above specs.

□ Use of Air Circulating Fans is mandatory with 50Mesh Insect Net.

3. *Note-3*

Foreign companies such as Gineagar, Polysack, AgriPolyane etc. are represented by its dealer in the country. For Polythene, majority of the companies are manufacturing the goods as specified in the IS standard, it is learnt that few manufacturers have started process for getting IS standard for their products.

ANNEXURE-5 (J)

SPECIFICATION OF MIS COMPONENTS

Sr.		Name of the System	Raw material used	ISI No/ Brand
1		Non Return Valve, Low Friction		
	a	1.5"	GM	778
	b	2"	GM	778
	c	2.5"	GM	778
	d	3"	GM	778
	e	4"	CI	14846
	f	5"	CI	14846
	g	6"	CI	14846
2		Sand Filter with backwash assembly		
	a	10 m3/hr x 1.5"/2/2.5"	MS	14606
	b	20m3/hr x 2"/2.5/3"	MS	14606
	c	25m3/hr x 2"/2.5/3"	MS	14606
	d	30m3/hr x 2.5"/3"/4	MS	14606
	e	40m3/hr x 2.5 "/3"/4'	MS	14606
	f	50 m3/hr x 3 "/4"	MS	14606
3		Disc Filter		
	a	10 m3/hr x 1.5"/2/2.5"	Metal / Plastic	12785
	b	20m3/hr x2"/2.5/3"		12785
	c	25m3/hr x2"/2.5/3"		12785
	d	40m3/hr x2.5"/3"/4'		12785
	e	50 m3/hr x 3 "/4"		12785
4		Screen Filter/Semi auto clean SF		
	a	10 m3/hr x 1.5"/2/2.5"	Metal / Plastic	12785
	b	20m3/hr x 2"/2.5/3"		12785
	c	25m3/hr x 2 "/2.5/3"		12785
	d	30m3/hr x 2.5"/3"/4		12785
	e	40m3/hr x 2.5"/3"/4'		12785
	g	50 m3/hr x 3 "/4"		12785
5		Hydro-Cyclone Filter		
	a	20m3/hr x 2 "/2.5/3"	MS	14743
	b	25m3/hr x 2 "/2.5/3"	MS	14743
	c	30m3/hr x 2.5"/3"/4	MS	14743
	d	40m3/hr x 2.5"/3"/4'	MS	14743
	e	50 m3/hr x 3 "/4"	MS	14743
6		Pressure Gauge 2"	Metal	3624
7		By Pass Assembly		
	a	1.5 "x 1.5"	MS/GM/ PVC	As Specified

Sr.		Name of the System	Raw material used	ISI No/ Brand
	b	2 “ x 1.5 “	MS/GM/ PVC	As Specified
	c	2.5” x2”	MS/GM/ PVC	As Specified
	d	3 “ x 1.5 “	MS/GM/ PVC	As Specified
	e	3 “ x 2 “	MS/GM/ PVC	As Specified
7A		By Pass Tee (Flange End)		
	a	2”	GI/MS	As Specified
	b	2.5”	GI/MS	GI/MS
	c	3”	GI/MS	GI/MS
	d	4”	GI/MS	GI/MS
	e	5”	GI/MS	GI/MS
7B		By Pass Tee (Flange End) – PP		
	a	2”	PP/ PP30% GF	As Specified
	b	2.5”		As Specified
	c	3”		As Specified
	d	4”		As Specified
8		Water Meter		
	a	1.5”	Metal	4064
	b	2”	Metal	4064
	c	2.5”	Metal	4064
	d	3”	Metal	4064
	e	4”	Metal	4064
9		C.I. Sluice Valves		
	a	4”	CI	5312
	b	6”	CI	5312
10		Butterfly Valve		
	a	2”	CI/MS	13095
	b	2.5”	CI/MS	13095
	c	3”	CI/MS	13095
	d	4”	CI/MS	13095
	e	5”	CI/MS	13095
	f	6”	CI/MS	13095
11		Pressure Relief Valve		As Specified
		2”		As Specified
12		Pressure Regulating Valve		
	a	1.5”		As Specified
	B	2”		As Specified
13	a	Header Assembly – MS		
	a	2”size x 1 filter	MS	As Specified
	b	2.5”size x 1 filter	MS	As Specified
	d	3”size x 1 filter	MS	As Specified

Sr.		Name of the System	Raw material used	ISI No/ Brand
	e	3"size x 2 filter	MS	As Specified
	f	4"size x 2/3 filter	MS	As Specified
	h	5"size x 2/3 filter	MS	As Specified
	i	6"size x ¾ filter	MS	As Specified
	b	Inlet Manifold (PP) for HA (Dia x Min. Length)		
	b	2.5"x 300 mm for Single Filter		
	d	3" x 315 mm for Single Filter		
	e	3"x 575 mm for Double Filters		
	f	4"x 600 mm for Double / Triple filters		
	c	Outlet Manifold (PP) for HA (Dia x Min. Length) with flanges		
	a	2" x 170 mm for Single Filter	PP/ PP30% GF	As Specified
	b	2.5"x 182 mm for Single Filter		As Specified
	d	3" x 190 mm for Single Filter		As Specified
	e	3"x 385 mm for Double Filters		As Specified
	f	4"x 385 mm for Double / Tripple filters		As Specified
14		PVC Ball Valve / Control Valve		
	a	40 mm	PVC	As Specified
	b	50 mm	PVC	As Specified
	c	63 mm	PVC	As Specified
	d	75 mm	PVC	As Specified
	e	90 mm	PVC	As Specified
15		PP Ball Valve / Control Valve		
	a	32 mm	PP	As Specified
	a	40 mm	PP	As Specified
	b	50 mm	PP	As Specified
	c	63 mm	PP	As Specified
	d	75 mm	PP	As Specified
	e	90 mm	PP	As Specified
	f	110 mm	PP	As Specified
16		PP Ball Valve with Flange Ends		
	a	2" Flange End	PP	As Specified
	b	2.5" Flange End	PP	As Specified
	c	3" Flange End	PP	As Specified
	d	4" Flange End	PP	As Specified
17		Air Release Valve		
	a	½"	Plastic	As Specified
	b	1"	Plastic	As Specified
	c	1 ½ "	CI	14845
18		Fertilizer Tank with Assembly		
	a	30 Litres	MS	As Specified

Sr.		Name of the System	Raw material used	ISI No/ Brand
	b	60 Litres	MS	As Specified
	c	90 Litres	MS	As Specified
19		Venturi Injector Assembly with Valve & without manifold		
	a	¾"	Plastic	14483
	b	1"	Plastic	14483
	c	1.25"	Plastic	14483
	d	1.5"	Plastic	14483
	e	2"	Plastic	14483
20		Gun Metal Throttle Valve		
	a	½"	Gun Metal	1239
	b	¾"		1239
	c	1.5"		1239
	d	2"		1239
	e	2.5"		1239
	f	3"		1239
	A	Throttle Valve – PP		
	a	2"	PP/ PP30% GF	As Specified
	b	2.5"		As Specified
	c	3"		As Specified
	d	4"		As Specified
21		PVC Pipe for Main and Sub-main Pipelines		
	a	32mm x 10 kg/cm ²	PVC	4985
	b	40 mm x 6 Kg/cm ²	PVC	4985
	c	50 mm x 6 Kg/cm ²	PVC	4985
	d	63 mm x 6 Kg/cm ²	PVC	4985
	e	75 mm x 6 Kg/cm ²	PVC	4985
	f	90 mm x 6 Kg/cm ²	PVC	4985
	g	110 mm x 6 Kg/cm ²	PVC	4985
	h	140 mm x 6 Kg/cm ²	PVC	4985
	I	160 mm x 6 Kg/cm ²	PVC	4985
	j	180 mm x 6 Kg/cm ²	PVC	4985
	k	63 mm x 4 Kg/cm ²	PVC	4985
	l	75 mm x 4 Kg/cm ²	PVC	4985
	m	90 mm x 4 Kg/cm ²	PVC	4985
	n	110 mm x 4 Kg/cm ²	PVC	4985
	o	140 mm x 4 Kg/cm ²	PVC	4985
	P	160 mm x 4 Kg/cm ²	PVC	4985
	q	180 mm x 4 Kg/cm ²	PVC	4985
	r	200 mm x 4 Kg/cm ²	PVC	4985
22		HDPE Pipe for Drip Main / Submain		
	a	40 mm (6 Kg/cm ²)	HDPE	14151

Sr.		Name of the System	Raw material used	ISI No/ Brand
	b	50 mm (6 Kg/cm ²)	HDPE	14151
	c	63 mm (3.2 Kg/cm ²)	HDPE	14151
	d	75 mm (2.5 Kg/cm ²)	HDPE	14151
	e	90mm (2.5 Kg/cm ²)	HDPE	14151
	f	110 mm (2.5 Kg/cm ²)	HDPE	14151
	g	63 mm (4 Kg/cm ²)	HDPE	14151
	h	75 mm (4 Kg/cm ²)	HDPE	4984
	i	90 mm (4 Kg/cm ²)	HDPE	4984
	j	110 mm (4 Kg/cm ²)	HDPE	4984
23		LLDPE Plain Laterals		
	a	12 mm diameter, 2.5Kg/cm ² – Class II	LLDPE	12786
	b	16 mm diameter, 2.5Kg/cm ² – Class II	LLDPE	12786
	c	20mm diameter, 2.0 kg/cm ² -class-I	LLDPE	12786
	d	25 mm diameter- Class II	LLDPE	12786
	e	32 mm diameter- Class II	LLDPE	12786
24		On line Dripper		
	a	2 LPH	PP	13487
	b	4LPH	PP	13487
	c	8 LPH	PP	13487
	d	2 LPH (Pressure compensating)	PP	13487
	e	4 LPH (Pressure compensating)	PP	13487
	f	8 LPH (Pressure compensating)	PP	13487
	f	16/20 mm, 1to4 LPH, 90cm	LLDPE	13488
	g	16/20 mm, 1to4 LPH, 100cm	LLDPE	13488
	h	16/20 mm, 1to4 LPH, 150cm	LLDPE	13488
27		Emitting Pipe (Integral Drip Lateral-PC) 16mm-Class II/20mm-Class I		
	a	16/20 mm, 1to4 LPH, 30cm	LLDPE	As Specified
	b	16/20 mm, 1to4 LPH, 40cm	LLDPE	As Specified
	c	16/20 mm, 1to4 LPH, 50cm	LLDPE	As Specified
	d	16/20 mm, 1to4 LPH, 60cm	LLDPE	As Specified
	e	16/20 mm, 1to4 LPH, 75cm	LLDPE	As Specified
	f	16/20 mm, 1to4 LPH, 90cm	LLDPE	As Specified
	g	16/20 mm, 1to4 LPH, 100cm	LLDPE	As Specified
	h	16/20 mm, 1to4 LPH, 150cm	LLDPE	As Specified
28		Flush Valve		
	a	40 mm	PVC	As Specified
	b	50 mm	PVC	As Specified

Sr.		Name of the System	Raw material used	ISI No/ Brand
	c	63 mm	PVC	As Specified
	d	75 mm	PVC	As Specified
	e	90 mm	PVC	
29		Vacuum Breaker Valve 0.5 “	PP	As Specified
30		Grommet		As Specified
	a	12 mm	LLDPE	As Specified
	b	16/20 mm	LLDPE	
31		Barbed Start Connector / Jointer /Take off / Nipple		
	a	12 mm	PP	As Specified
	b	16/20mm	PP	As Specified
32		Nipple 17 x 17 mm/20 x 20mm	PP	As Specified
33		Reducer		As Specified
	a	Reducer 17 x 16 mm/20 x 16mm	PP	As Specified
	b	Reducer 16 x 12 mm	PP	As Specified
	c	Reducer 17 x 12 mm	PP	As Specified
34		Tee		
	a	Tee 16x16 / 16x12/20x 16	PP	As Specified
	b	Tee 12 x 12	PP	As Specified
35		End Cap (Line End)		
	a	12 mm	PP	As Specified
	b	16 mm/20mm	PP	As Specified
36		Spaghetti/Extension Tube(6 mm x 4 mm)	LLDPE	As Specified
37		Spaghetti/Extension Tube Barbed Connector	PP	As Specified
38		Dripper Plug	PP	As Specified
39		Winder – Drip line	MS	As Specified
40		Start Connector Belt Type	HDPE	As Specified
41		Micro tube		
	a	1.2 mm ID	LLDPE(2 2PA002 &20FS0 10)	As Specified
	b	1.3 mm ID		As Specified
	c	1.5 mm ID		As Specified
	d	1.8 mm ID		As Specified
	e	2.0 mm ID		As Specified
42		Porous Pipe		
	a	9 mm	Crumb Rubber + LLDPE/ Thermo plastic Resin	As Specified
	b	12 mm		As Specified
	c	16 mm		As Specified
	d	22 mm		As Specified

Sr.		Name of the System	Raw material used	ISI No/ Brand
43		Mini (Impact) Sprinkler		
	a	Double Nozzle – full Circle	Enginee ring Plastic	IS 12232 (Part 1):1996 &(Part 2): 1987
	b	Single Nozzle –Adjustable Arc and full Circle		
	c	M / F Adaptor ½”	PVC	As Specified
44		Extension / Connecting Tube (1.2 m long)		
	a	12mm	PVC	As Specified
	b	13mm	PVC	
	c	12mm	PE	
	d	13mm	PE	
45		Male / Female connector (9/12mm)	PVC	As Specified
46		Plug (9/12mm)	PVC	As Specified
47		Installation Stake		
	a	1 Meter long (5mm Dia)	MS rod with zink coating	As Specified
	b	1 Meter long (8 mm Dia)		
	c	1.2 Meter long (5 mm Dia)		
	d	1.2 Meter long (8 mm Dia)		
48		Threaded Elbow (Compression)		
	a	20 mm	PP	As Specified
	b	25 mm	PP	
	c	32 mm	PP	
	d	40 mm	PP	
49		Male Threaded Adopter (Compression)		
	a	20 mm “	PP	As Specified
	b	25 mm	PP	
	c	32 mm	PP	
	d	40 mm	PP	
	e	75 mm	PP	
	f	90 mm	PP	
	g	110 mm	PP	
50		Tee (Compression)		
	a	20 mm	PP	As Specified
	b	25 mm	PP	
	c	32 mm	PP	
	d	40 mm	PP	
51		Coupler / Joiner (Compression)		

Sr.		Name of the System	Raw material used	ISI No/ Brand
	a	20 mm	PP	As Specified
	b	25 mm	PP	
	c	32 mm	PP	
	d	40 mm	PP	
52		End plug (Compression)		
	a	25 mm	PP	As Specified
	b	32 mm	PP	
	c	40 mm	PP	
53		Service Saddle		
	a	63 mm	PP	As Specified
	b	75 mm	PP	
	c	90 mm	PP	
	d	110 mm	PP	
54		Sprinkler Nozzles (1.7 to 2.8 Kg/cm²) 5 to 40 Litres/Minute Capacity		
	a	20mm-Brass	Brass	IS 12232 (Part 1):1996 &(Part 2): 1987
	b	20mm-Plastic	Enginee ring Plastic	
55		End Plug with Quick Action Coupler		
	a	50 mm	HDPE	As Specified
	b	63 mm	HDPE	
	c	75 mm	HDPE	
	d	90 mm	HDPE	
56		Tee with Quick Action coupler		
	a	50 mm	HDPE	As Specified
	b	63 mm	HDPE	
	c	75 mm	HDPE	
	d	90 mm	HDPE	
57		HDPE Pipes with Quick Action Coupler (6m Long)		
	a	50 mm (4 Kg/cm ²)	HDPE	14151
	b	63 mm (3.2 Kg/cm ²)	HDPE	14151
	c	75 mm (2.5 Kg/cm ²)	HDPE	14151
	d	90 mm (2.5 Kg/cm ²)	HDPE	14151
58		Sprinkler Coupler with Foot Batten Assembly Quick Action		
	a	50 mm	HDPE	14151
	b	63 mm	HDPE	14151
	c	75 mm	HDPE	14151
59		Riser Pipe 20mm Diameter x 75 cm Long	GI	1239/3601
60		Bend with Quick Action coupler		

Sr.		Name of the System	Raw material used	ISI No/ Brand
	a	50mm	HDPE	As Specified
	b	63 mm	HDPE	
	c	75 mm	HDPE	
	d	90 mm	HDPE	
61		Pump Connecting Coupler/Nipple with Quick Action		
	a	50 mm	GI/HDPE	As Specified
	b	63 mm	GI/HDPE	As Specified
	c	75 mm	GI/HDPE	As Specified
	d	90 mm	GI/HDPE	As Specified
62		Micro Sprayer/Jet	PP	14605
63		Micro Sprinkler Set	PP	14605
64		GI Fittings	GI	1879
65		PVC/HDPE Fittings	PVC/HDPE	7834(PVC)
66		Secondary Transportation for DIS		
67		Installation Charges		
68		Agronomical Consultancy		
69		Drip Tape		
	a	12.5 mm diameter (0.400 mm wall thickness)	LLDPE/MDPE	As specified
	b	15.875 mm diameter (0.508 mm wall thickness)	LLDPE/MPE	ISO 9261
	c	15.875 mm Diameter (0.635 mm wall thickness)	LLDPE/MDPE	ISO 9261
	d	16.5 mm diameter (0.400 mm wall thickness)	LLDPE/MDPE	As specified
70		Drip Tape Take Off		
	a	12.5 mm/15.875 mm/16.50 mm	PP	As specified
71		Drip Tape Gromate		
	a	12.5 mm	Rubber	As specified
	b	15.875 mm/16.50 mm	Rubber	
72		Drip Tape Connector/Joiner		
	a	12.50 mm/15.875 mm/16.50 mm	PP	As specified
73		Lateral Drip Tape Connector		
	a	12.50 mm/15.875 mm/16.50 mm	PP	As specified
74		Rain Gun Sprinkler		
	a	1.25" female threaded connection	Aluminium	IS 12232 Part 1:1996
	b	1.5" female threaded connection	Aluminium	

Sr.		Name of the System	Raw material used	ISI No/ Brand
75		Tripod with adaptor to feeder line		
	a	1.25''x1.5 mt	GI	As specified
	b	1.25''x2.0 mt	GI	
	c	1.5'' x 1.5mt.	GI	
	d	1.5''x 2.0 mt	GI	
76		MS Head Unit Platform	As specified	
	a	For accommodating Sand Filter + Disc/Screen Filter	MS	
	b	For accommodating Hydro Cyclone Filter + Disc/Screen Filter	MS	
	c	For accommodating Disc/Screen Filter		

DETAILS OF APPROVED RATES

संरक्षित खेती अधोसंरचना (पाली हाउस, शेड नेट हाउस एवं वाक इन टनल) की प्रदाय एवं स्थापना के लिये दरें (सभी कर सहित एवं एफ ओ आर डेस्टीनेशन है तथा निगम का मार्जिन 3 प्रतिशत सहित)

SR. NO	Item Description	Component	BASIC RATE	GST %	GST Amount	Total Amount with GST in Rs.
1	Greenhouse – Naturally Ventilated (Type-2) 500Sq mt	Structure	313080.00	18%	56354.40	369434.40
		Polythene (polythene along with installation mechanism)	50000.00	18%	9000.00	59000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	11123.00	18%	2002.00	13125.00
		Fogging System	23729.00	18%	4271.00	28000.00
		Misting System	4746.00	18%	854.00	5600.00
		MI system	28475.00	18%	5125.00	33600.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	449152.40		80847.00	529999.40
2	Greenhouse – Naturally Ventilated (Type-2) 1000Sq mt	Structure	547719.60	18%	98590.00	646309.60
		Polythene (polythene along with installation mechanism)	100000.00	18%	18000.00	118000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	22246.00	18%	4004.00	26250.00
		Fogging System/Misting system	47458.00	18%	8542.00	56000.00
		MI system	56949.00	18%	10251.00	67200.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	792372.60		142627.00	934999.60

SR. NO	Item Description	Component	BASIC RATE	GST %	GST Amount	Total Amount with GST in Rs.
3	Greenhouse – Naturally Ventilated (Type-2) 2000Sq mt	Structure	1037169.00	18%	186691.00	1223860.00
		Polythene (polythene along with installation mechanism)	200000.00	18%	36000.00	236000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	44492.00	18%	8008.00	52500.00
		Fogging System	94915.00	18%	17085.00	112000.00
		Misting System	0.00	18%	0.00	
		MI system	113898.00	18%	20502.00	134400.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	1508475.00		271525.00	1780000.00
4		Greenhouse – Naturally Ventilated (Type-2) 4000Sq mt	Structure	1936407.00	18%	348553.00
	Polythene (polythene along with installation mechanism)		400000.00	18%	72000.00	472000.00
	Shade Net (shade net, curtains, insect screen along with installation mechanism)		88983.00	18%	16017.00	105000.00
	Fogging System Misting System		189831.00	18%	34169.00	224000.00
	MI system		227797.00	18%	41003.00	268800.00
	Agronomical Services		18000.00	18%	3240.00	21240.00
	Total		2861017.00		514983.00	3376000.00
5	Greenhouse – Fan and Pad (Type-2) 500Sq mt		Structure	563081.00	18%	101354.00
		Polythene (polythene along with installation mechanism)	50000.00	18%	9000.00	59000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	11123.00	18%	2002.00	13125.00
		Fogging System/Misting syastem	28475.00	18%	5125.00	33600.00
		MI system	28475.00	18%	5125.00	33600.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	699153.00	18%	125847.00	825000.00

SR. NO	Item Description	Component	BASIC RATE	GST %	GST Amount	Total Amount with GST in Rs.
6	Greenhouse – Fan and Pad (Type-2) 1000Sq mt	Structure	996873.00	18%	179437.00	1176310.00
		Polythene (polythene along with installation mechanism)	100000.00	18%	18000.00	118000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	22246.00	18%	4004.00	26250.00
		Fogging System/Misting system	47458.00	18%	8542.00	56000.00
		MI system	56949.00	18%	10251.00	67200.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total		1241525.00		223475.00
7	Greenhouse – Fan and Pad (Type-2) 2000Sq mt	Structure	1935475.00	18%	348385.00	2283860.00
		Polythene (polythene along with installation mechanism)	200000.00	18%	36000.00	236000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	44492.00	18%	8008.00	52500.00
		Fogging System/Misting system	94915.00	18%	17085.00	112000.00
		MI system	113898.00	18%	20502.00	134400.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total		2406780.00		433220.00
8	Greenhouse – Fan and Pad (Type-2) 4000Sq mt	Structure	3821153.00	18%	687807.00	4508960.00
		Polythene (polythene along with installation mechanism)	400000.00	18%	72000.00	472000.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	88983.00	18%	16017.00	105000.00
		Fogging System/Misting System	189831.00	18%	34169.00	224000.00
		MI system	227797.00	18%	41003.00	268800.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total		4745763.00		854237.00

SR. NO	Item Description	Component	BASIC RATE	GST %	GST Amount	Total Amount with GST in Rs.
9	Net house with Flat roof(Type-2) 500 Sq mtrs	Structure	189119.00	18%	34041.00	223160.00
		Polythene (polythene along with installation mechanism)	0.00	18%	0.00	0.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	53390.00	18%	9610.00	63000.00
		Fogging System/Misting system	11864.00	18%	2136.00	14000.00
		MI system	28475.00	18%	5125.00	33600.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	300847.00		54153.00	355000.00
10		Net house with Flat roof(Type-2) 1000 Sq mtrs	Structure	396237.00	18%	71323.00
	Polythene (polythene along with installation mechanism)		0.00	18%	0.00	0.00
	Shade Net (shade net, curtains, insect screen along with installation mechanism)		106780.00	18%	19220.00	126000.00
	Fogging System/Misting system		23729.00	18%	4271.00	28000.00
	MI system		56949.00	18%	10251.00	67200.00
	Agronomical Services		18000.00	18%	3240.00	21240.00
	Total		601695.00		108305.00	710000.00
11	Net house with Flat roof(Type-2) 2000 Sq mtrs		Structure	824711.99	18%	148448.00
		Polythene (polythene along with installation mechanism)	0.00	18%	0.00	0.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	199322.00	18%	35878.00	235200.00
		Fogging System/Misting System	47458.00	18%	8542.00	56000.00
		MI system	113898.00	18%	20502.00	134400.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	1203389.99		216610.00	1419999.99

SR. NO	Item Description	Component	BASIC RATE	GST %	GST Amount	Total Amount with GST in Rs.
12	Net house with Flat roof(Type-2) 4000 Sq mtrs	Structure	1667424.00	18%	300136.00	1967560.00
		Polythene (polythene along with installation mechanism)	0.00	18%	0.00	0.00
		Shade Net (shade net, curtains, insect screen along with installation mechanism)	398644.00	18%	71756.00	470400.00
		Fogging System/Misting system	94915.00	18%	17085.00	112000.00
		MI system	227797.00	18%	41003.00	268800.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	2406780.00		433220.00	2840000.00
13	Poly Tunnel 800 sq mt	Structure	248441.00	18%	44719.00	293160.00
		Polythene (polythene along with installation mechanism)	100000.00	18%	18000.00	118000.00
		Fogging System	11864.00	18%	2136.00	14000.00
		MI system	28475.00	18%	5125.00	33600.00
		Agronomical Services	18000.00	18%	3240.00	21240.00
		Total	406780.00		73220.00	480000.00

AFFIDAVIT

We.....hereby offer for the supply of ----- Conforming to the Specifications as mentioned in EOI.

We undertake to supply such quantities of material as per Specification as mentioned in EOI, as we may be called upon to supply and under the conditions here-to enclosed during the allotted period from the date of execution of the agreement on the rates agreed upon, at the places to be specified by the M.P. State Agro Industries Development Corporation Limited within the specified delivery period.

We undertake that our firm has neither been Blacklisted/Debarred by any Government / Government Undertaking /Bank nor penalized on the same ground. We also undertake that no legal proceeding is pending in any Courts on the same grounds.

We undertake that the rates given to the Corporation are the lowest price, in accordance to the prevailing rates of the Company / their other authorized dealer & market condition. In case of any dispute or discrepancy in the submitted rates we will be sole responsible. In such cases the Corporation will be free to recover the losses or impose penalties as decided by the Managing Director of the Corporation.

We hereby agree to abide by and fulfill all the terms and conditions of contract annexed hereto and in default thereof to forfeit and pay to the M.P. State Agro Industries Development Corporation Limited, the penalties or sum of money mentioned in the said conditions.

I have read and fully understood the terms and conditions of supplies etc. mentioned in the documents.

Name :.....
Designation:.....
Signature with Office Seal..)

Witness:

- 1.
- 2.

Note: To be submitted on non judicial stamp of Rs 1000.00

APPLICANT COMPANY PROFILE

Sr.	Particular	Detail
1	Name of Organisation	
2	Nature of the Organisation	
a	In case of Public/Pvt. Ltd company (Certified copy of Certificate of incorporation for companies & Memorandum and Articles of Associations)	
b	In case of Partnership Firm (Partnership deed)	
c	In case of Proprietorship (Registration certificate, Factory registration, DIC – industrial registration)	
d	In case of society (Certified copy of registration deed with objects of constitution of society)	
e	In case of Corporation (Authenticated copy of the parent statute)	
3	Address with Phone No. and Fax No	
4	E mail	
5	Name and Contact details of the Authorised Person	
6	Any other details in support of your office	
7	PAN (attach attested copy)	
8	TIN	

Seal and Sign of

AUTHORISED SIGNATORY

**TO WHOM SO EVER IT MAY CONCERN
CHARTERED ACCOUNTANT CERTIFICATE**

(TO BE SUBMITTED IN ORIGINAL ON LETTER HEAD OF C.A.)

On the basis of verification of books of accountants and other documents produced before us and maintained by the Company, we certify that M/s _____ is engaged in construction of greenhouse/net house/poly house/ poly tunnel. This is to certify that they have turn over from construction activities of greenhouse/net house/poly house/ poly tunnel as under for the last 3 years.

Sr No	Financial Year	Turnover (Rs. in lakhs)
1	2016-17	
2	2017-18	
3	2018-19	
	Average of above	

**FORMAT FOR NUMBER OF GREENHOUSE/NET HOUSE/POLY HOUSE/POLY TUNNEL WORK
COMPLETED IN LAST THREE YEARS FOR SUBSIDISED CASES**

This is to certify that M/s _____ has executed
greenhouse/net house/ poly house/poly tunnel projects in the State of _____ as
follows:

Project Executed In Nos. (Area in Sq. M) Please give both the figures i.e. Number and Area								
Year	Green House 1	Green House 2	Net house 1	Net house 2	Poly house 1	Poly house 2	Poly tunnel 1	Poly tunnel 2
2016-17								
2017-18								
2018-19								

Note:

- (1) Name of Beneficiary for whom the Project is executed in the State.
- (2) Area of Project

Applicant/Offerer has to submit separately for each state where work is executed

Name of Authority of State Nodal Agency:

Counter signed by AUTHORISED SIGNATORY

FORMAT FOR NUMBER OF GREENHOUSE/NET HOUSE/POLY HOUSE / POLY TUNNEL WORK COMPLETED IN LAST THREE YEARS UNDER SUBSIDY SCHEMES			
TO WHOMSO EVER IT MAY CONCERN			
This is to certify that M/s _____ has executed green-house/net-house/poly-house/poly tunnel projects in the State of _____ as follows:			
No	Project Executed	Name and address of Beneficiary	(in Nos.)

State Nodal Department/Nodal Agency

Counter signed by AUTHORISED SIGNATORY

ANNEXURE-12

DETAILS OF PERSONNEL

Sr.	Name of Person	Qualification	Exp. in years in providing agronomical services	Contact No.	Signature
1					

Seal and Sign of

AUTHORISED SIGNATORY

DRAFT AGREEMENT

This agreement made at Bhopal this day ofbetween Madhya Pradesh State Agro-Industries Development Corporation, ‘Panchanan, 3rd Floor, Malviya Nagar, Bhopal, M.P. hereinafter referred to as the ‘Corporation’ which expression shall unless repugnant to the context or meaning there of includes its successors and assigns on the one part.

AND

M/s. having its office at through Shri designation(hereinafter referred to as the Supplier whose expression unless repugnant to the context and meaning thereof includes its assigns, successors and administrations on the other part.

WHEREAS the Corporation invited Rate Contract Offer (EOI) for supply of ----- on the terms and conditions envisaged in the terms schedule issued with the Rate Contract Offer Document and purchased by the supplier.

AND WHEREAS the supplier has accepted each and every term and condition contained in the Rate Contract Offer Document, while submitting his offer.

AND WHEREAS the Corporation accepted the offer submitted by the supplier vide its letter of acceptance no.dated in consideration of the premises and the mutual premises and undertakings hereinafter specified and for other good and valuable consideration this agreement witness and is hereby agreed on the conditions of the Tender. The following documents shall form and be constructed a part of the Agreement Deed:-

- a. The Tender submitted by the supplier including all the annexure attached thereto.
- b. Specifications(**Bill of Material**) for supply of ----- (Attached)
- c. The letter of acceptance dated ----- issued by the Corporation.
- d. The offer submitted by the supplier.
- e. The rates mentioned in annexure to agreement.

The aforesaid documents shall be taken as complementary and mutually explanatory of one another but in case of discrepancies and ambiguities shall take precedence in the order set out above. In this regard the decision of Managing Director, M.P. State Agro-Industries Development Corporation Limited shall be final.

IN WITNESS WHEREOF the parties hereto have signed this agreement on the day and year referred to above.

For Supplier

.....

For

M.P. STATE AGRO INDUSTRIES
 DEVELOPMENT CORPORATION
 LIMITED

Signature with Office Seal

DEPUTY GENERAL MANAGER
 (Horticulture)

Witnesses

- 1.
- 2.

Witnesses

- 1.
- 2.

Authority to submit EOI

(On Producer company's letterhead)

To,

The Managing Director
M.P.State Agro Industries Development Corporation Ltd.
Panchanan Bhawan, 3rd Flore ,
Malviya Nagar,
Bhopal

Sub : Authority to submit Rate Contract Offer

Dear Sir,

I.....Designation hereby authorize M/s
.....to submit Rate Contract Offer M.P. State Agro
Industries Corporation Ltd on behalf of the company due on 11.11.2019

We hereby undertake that the Company shall abide by all the terms and conditions as mentioned in
Tender Document.

I further certify that I am authorized to issue this certificate on behalf of the company.

If an order is placed with the authorized company as above, the company undertakes to supply the
order as per terms and condition of EOI.

(Signature)

Name
Designation
Tel No
Mobile No
E mail

UNDERTAKING TO BE SUBMITTED AT THE TIME OF SUPPLY

(To be submitted while supplying the material against orders issued by the Corporation)

**I..... (name of authorized signatory) Designation
of (name of the supplier) hereby undertake that we have supplied all
the material as per quality standard laid down in Annexure 5A/5B/5C/5D/5E/5F/5G/5H/5I
(strike off which is not applicable) against order no dated
We further undertake that the structure will be installed as per drawing and design as laid
down in EOI/RCO documents.**

Date

Signature

Place

Name

Designation