# Dayalbagh Educational Institute (DEEMED TO BE UNIVERSITY) Dayalbagh, Agra-282005

Tender No.DEI/Sc/Chemistry/SKSoni/TDR-20

#### Letter of Intent for "Hi-tech Polyhouses"

ALL interested Manufacturers/Vendor/Entrepreneurs ARE INVITED to submit their "Expression of Interest" (EoI) with the tentative technical bid with specifications and contractual terms and conditions for our SPECIFIC requirements of various products/equipment/jobs etc. for establishing TWO "HI-TECH POLYHOUSES". The objective of this Letter of intent is to select Manufacturers/Vendors/Entrepreneurs for COMPLETING a project ON "HI-TECH POLYHOUSES" at Khasra 359, Shanti Nagar, near Senior Boys Hostel, Dayalbagh Educational Institute, Dayalbagh, AGRA. We require Bidder for undertaking project for "HI-TECH POLYHOUSES". There will be two stage bidding for the above high value plant, machinery etc. The bidder will provide a platform to train the student/faculty via digital means to drive MULTIPLE ACTIVITIES in Hi-tech Polyhouses. (Detailed Scope of work Annexure-I)

All interested Manufacturers/Vendors/Entrepreneurs are requested to submit their LoI in view of the objectives and scope of the work and SUBMIT AN EFFICIENT alternative proposal also. Interested parties shall be required to submit the **Earnest Money Deposit (EMD) for an amount of Rs. 3,20,000**/-by way of demand drafts/banker's cheque/FDRs which is refundable and a non-refundable fee for an amount of Rs. 200/- (Rupees two hundred only) by Cash or Demand draft. The demand drafts shall be drawn in favour of "Registrar, Dayalbagh Educational Institute, Agra" payable at Agra. The demand drafts (validity 60 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid documents addressed to: Registrar, Dayalbagh Educational Institute, Dayalbagh, Agra-282005. The parties submitting EoI for complete project shall be preferred.

All interested parties are requested to submit their proposals at the office of the undersigned as per following schedules only:

Site-visit (Khasra-359, Shantinagar) 17/01/2020 at 11.00 AM Pre-Bid Meeting: 17/01/2020 at 11.30 AM Time and last date of submission of the EoI: 03/02/2020 at 2.00 PM Time of EoI Proposal Opening: 03/02/2020 at 2.30 PM

Venue of EoI Proposal Opening: CAO, Dayalbagh Educational Institute, Dayalbagh

Agra-5 in the presence of bidders who want to be

present at the time of opening of bid.

Interested parties or bidders may put the proposal/document completed in all respect and other requisite documents in the box kept in the General Section, CAO, Dayalbagh Educational Institute, Dayalbagh, Agra-282005. The bidders are also informed that they may come personally or send their authorized representative to be present at the time of opening of bid. Please note that tender box shall be opened at the time mentioned above irrespective of whether bidders himself or any of their representatives are present or not. The EoI/Bid/Proposal shall not be entertained after the deadline under any circumstances whatsoever. For more details please visit the institute's website <a href="http://www.dei.ac.in">http://www.dei.ac.in</a> or contact Dr. S. K. Soni-9045047485. VENDORS ARE WELCOME TO VISIT THE PROPOSED SITE IF REQUIRED BEFORE SUBMITTING THE PROPOSAL.

Registrar Dayalbagh Educational Institute Dayalbagh, Agra-282005

Date: 10-01-2020

#### 1. Section I: Introduction

#### 1.1 About DEI

The Dayalbagh Educational Institute is located amidst the tranquil environs of Dayalbagh, a self-contained colony renowned for its serene environment and secular establishments, in which its inhabitants lead an active, disciplined and co-operative community life dedicated to service, conforming to the high spiritual ideals of their faith. On the outskirts of the historic city of Agra, the campus is situated in garden settings, away from the din and noise of the city. Nestled between lush green fields, it provides an excellent ambience and academic setting which is in harmony with nature. This, along with a simple, disciplined and principled life, undoubtedly contributes to the strength of the social, moral and spiritual fiber of the institute's educational system. The Government of India declared the DAYALBAGH EDUCATIONAL INSTITUTE as an institution Deemed to be a University from the session 1981-82, under Section 3 of the University Grants Commission Act, 1956 (3 of 1956). The Institute has since been accorded the membership of the Association of Indian Universities. The Institute comprises six faculties, faculty of Arts, Commerce, Education, Engineering, Science and Social Sciences and three colleges, DEI Technical College, DEI PV Primary School and REI Intermediate College. From the session 1986-87, the DEI Technical College, a diploma level Engineering Institution, from the session 1995-96, the DEI PremVidyalaya Girls' Intermediate College, and from the session 2012-13, the REI Intermediate College have also been brought under the academic and administrative control of the Institute year. The vocational courses were started in the year 1993. The Women's wing of Technical College – Women's Polytechnic was started in the year 2004, and in the same year, the Institute initiated a major programme of Distance Education to benefit students residing at urban-suburban interfaces. In the year 2015, Dayalbagh Educational Institute was empanelled as Government Training Partner (GTP) with Uttar Pradesh Skill Development Mission (UPSDM), Department of Vocational Training & Skill Development, Uttar Pradesh State Government to train youth in various vocational skills. Also a Dean Dayal Kaushal Kendra was sanctioned to DEI by MHRD to offer B.Voc., M.Voc. and Ph.D. degrees in skilling.

# Objective of the EoI

The objective of this EoI is to select vendor for conducting a project for DEI at Shanti Nagar, Khasra Number 359 "TWO HI-TECH POLYHOUSE". Scope of work has been specified in the document. (Annexure-I)

#### 2. Section II: Instructions to Venders

#### **General Instructions**

#### 2.1 EoI Validity

2.1.1 EoIs submitted by Venders shall remain valid for acceptance for ninety (90) calendar days from the next day of the last date mentioned in event date. An EoI valid for a shorter period may be rejected by the Purchaser as being non-responsive.

2.1.2 In exceptional circumstances, the Purchaser may solicit the Venders' consent to an extension of the EoI validity period. The request and responses thereto shall be made in writing. If a Vender accepts to prolong the period of validity, the Bid Security shall also be suitably extended. A Bidder may refuse such request which will not lead to forfeiting its Bid Security. A Bidder granting the request will neither be required nor permitted to modify its Bid.

#### 2.2 Cost of Bidding

- 2.2.1 The Bidder/ Vender shall bear all costs associated with the preparation and submission of the EoI and any subsequent events/activities of Bidder related to this document.
- 2.2.2 The Purchaser will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

# 2.3 Language of EoI

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

# 2.9Bidder to obtain his own information

2.9.1The Bidder shall for all purposes deemed to have independently obtained all necessary information for the purpose of preparing his EoI. The correctness of the details given in the Tender Document is for guideline information only, to help the Bidder prepare his EoI. The cost of visiting the sites shall be borne by the Bidder. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not providing services in strict conformity with scope and special conditions of the contract.

# 2.10 Clarification on Tender Document

- 2.10.1 Bidders requiring any clarification on the Tender Document may notify the Purchaser (at its postal/e-mail address given in Event Date) in writing not later than 1 day before the last date of EoI submission.
  - Similarly, if a Bidder feels that any important provision in the documents is unacceptable; such an issue should be raised at this stage. The Purchaser will respond during pre-bid conference (date, time and venue will be as mentioned in Event Date) to any request for clarification or modification of the Tender Document. Authorized Representative of the Bidders will be allowed to attend the pre-bid conference. Personal queries from individuals shall not be entertained.
- 2.11.2 If deemed fit, written copies of the Purchaser's response (including explanation of queries without identifying its source) will be sent after pre-bid conference to all the Bidders in the form of addendum/corrigendum.

# 2.11 Amendment of Bidding Document

2.11.1 At any time prior to the deadline for submission of the EoIs, Purchaser may modify the Tender Document by issue of an addendum/corrigendum.

- 2.11.2 In addition, Purchaser may issue addendum/corrigendum to the Tender Document to make/reflect amendment(s) in terms & condition or Scope of Work specified in this Tender Document.
- 2.11.3 Any such addendum/corrigendum will be made available at the AGRA DEI website. No separate other communication in this regard shall be made with any Bidder. It will be the responsibility of the Bidder to regularly visit the website to keep them updated on such changes.
- 2.11.4 No clarification obtained through verbal communication by the Bidders from any officer, agent or employee of the Purchaser or any staff of the Program Management Consultant will be deemed as addendum/corrigendum to the Tender document.
- 2.11.5 The Purchaser, at its discretion for any reason whether at its own initiative or in response to a clarification requested by a bidder may add, modify or remove any element of the services of goods.
- 2.11.6 In order to provide Bidders / Venders reasonable time to take the addendum/corrigendum into account in preparing their EoIs, the Purchaser may, at its own discretion, extend the last date of Bid submission. In such an event, Bidders shall not be entitled to any compensation, in any form whatsoever.

# 2.12 General Instruction for Bid Preparation

- 2.12.1 The Bidders are advised to submit their EoIs complete in all respect. The Bidder shall submit a comprehensive list of attached forms/declarations/certificates etc. in response to Tender Document.
- 2.12.2 The Bidders in their own interest are advised to be very careful while writing quantity and rates in Price EoI. The quantity and rates should be written very neatly, preferably typed, and there should be no overwriting or corrections. In case there are some corrections or overwriting, the same should be signed by the Authorized Signatory. The quoted prices shall be inclusive of statutory taxes, duties and other levies.
- 2.12.4 The Scope of Work specified in this Tender Document shall be executed strictly in accordance with the conditions specified in the General Conditions of Contract and other conditions specified in various sections of this Tender Document. If any of the aforesaid conditions is not clear to a Bidder, clarification may be sought from the Purchaser as per the provisions of clause 2.10 (Clarification on Tender Document).
- 2.12.5 The Bidders must accept all the conditions specified in the Tender Document to facilitate early finalization of Bids. Separate set of commercial conditions (such as Bidder's standard printed conditions) enclosed with the offer and any reference thereto may prevent the Bid from being considered by the Purchaser.

# 2.13 Preparation of EoI/Proposal

- 2.13.1 Bidder may submit undertwo Bid stage system/Proposal. If Bidder submits or participated in more than one EoI, such EoIs shall be disqualified.
- 2.13.2 The EoI/Proposal as well as all related correspondence exchanged by the Bidders and the Employer shall be written in English language, unless specified otherwise.
- 2.13.3 In preparing their EoI/Proposal, Bidders are expected to examine in detail the documents comprising the EoI. Material deficiencies in providing the information requested may result in rejection of aEoI/Proposal.

2.13.4 The EoI shall not include any financial information.

# **2.14 Corrupt Practice**

2.14.1 The Purchaser requires bidders, SI, and contractors to observe the highest standard of ethics during the execution of such contracts.

The following definitions apply:

- 2.14.1.1 Corrupt practice means the offering, giving receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any party in the procurement process or the execution of a contract.
- 2.14.1.2 Fraudulent practice means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract.
- 2.14.1.3 Collusive practices mean a scheme or arrangement between two or more bidders, with or without the knowledge of the DEI, designed to influence the action of any party in a procurement process or the execution of a contract.
- 2.14.1.4 Coercive practices means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract.
- 2.14.2 The Purchaser will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent collusive or coercive practices in competing for the Contract.
- 2.14.3 The Purchaser will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in projects if it at any time determines that the Bidder has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, a DEI contract.
- 2.14.4 Furthermore, Bidders shall be aware of the provision stated in clause 3.15 (Termination of Contract) of the General Conditions of Contract.

#### 2.15 Conflict of Interest

- 2.15.1 Bidder shall hold DEI's interest paramount, without any consideration for future work and strictly avoid conflict with other assignment or their own corporate interest.
- 2.15.2 Bidder should not be engaged in any such business (excluding any work assigned to them by DEI) which has conflict of interest with the project for which the EoIs are being submitted.
- 2.15.3 DEI considers a conflict of interest to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitute a prohibited corrupt practice. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:
- Receive or have received any direct or indirect subsidy from any of them; or have common controlling shareholders, or Have the same legal representative for purposes of this EoI, or Have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the EoI of another Bidder, or Influence the decisions of the DEI regarding this bidding process.

2.15.4 Bidders have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of Purchaser, or that may reasonably be perceived as having this effect. If the Bidder fails to disclose said situations and if the Purchaser comes to know about any such situation at any time, it may lead to the disqualification of the Bidder during bidding process or the termination of its Contract during execution of assignment.

#### 2.16 Right of Purchaser to Accept or Reject EoIs

- 2.16.1 The Purchaser reserves the right to accept or reject any EoI, and to annul the bidding process and reject all EoIs at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.
- 2.16.2 The right to accept the EoIs in response to this Tender Document will rest with the Purchaser. The Purchaser further does not bind himself to accept and reserves the authority to reject any or all the EoIs received without assigning any reason whatsoever.

# 2.17 EoI Opening

- 2.17.1 The EoIs will be opened as per dates given in the portal.
- 2.17.2 The submitted EoIs must be readable through open standards interfaces. Unreadable and or partially submitted EoI files will be considered incomplete and rejected for further EoI evaluation.

#### 2.18 EoI Evaluation

- 2.18.1 The evaluation process of the EoI document, proposed to be adopted by the Purchaser is indicated under this clause.
- 2.18.2 Evaluation Qualification EoI
  - a) First the Pre-Qualification Proposal will be evaluated and only those bidders who qualify the requirements will be eligible for next set of evaluations. Technical Proposal of Venders / Bidders, who do not meet the Pre-Qualification criteria, will not be opened.
  - b) Documents and required forms submitted by the bidders as part of the Pre-Qualification criteria will be opened and evaluated for compliance in this stage of evaluation.
    - c) Bidders financial criteria:Bidders will have to submit Balance sheet and income tax returns.

## 2.18.3 Evaluation of Technical EoI

Kindly add support documents like design sheets, data sheets, certificates whatever necessary to support your technical EoI

- a) Only those Bidders, who meet all the pre-qualification criteria stated above, shall be asked to submit Techno-Commercial Bid. DEI will review the documents of the bidder. Evaluation shall be on the basis of technical specifications proposed subject to compliance with requirements. EoIs that are not substantially responsive are liable to be disqualified at DEI discretion.
- b) In order to assist in the examination, evaluation and comparison of EoIs, the Purchaser may at its discretion ask the Bidder for a clarification regarding its EoI. The clarification

shall be given in writing immediately, but no change in the price shall be sought, offered or permitted. Bidder should fill and upload following required documents, which has to be used in Technical Evaluation.

# 2.18.4 **Pre-Qualification Criteria:**The hidder should be a research

1	a) The bidder should be a registered entity for at least 3 Years while providing products/services to Govt Sector/Institutes. b) Consortium is limited to three members	a) Certificate of Incorporation/Registration				
	only, out of which any one partner will satisfy 1(a) and only one will be lead bidder.	b) Consortium Agreement to be furnished				
2	The Bidder or Consortium should have developed and deployed Centre of Excellence /Remote Labs / Greenhouse /Turn Key Projects in Industries/ Government / private organizations in India, of min value of `400 Lakh in not more than three work awards/ purchase orders.  Work order or Purchase order of the sam be Submitted as documentary evidence					
3	The Bidder or Consortium should have delivered Remote access/Cloud based electrical infrastructure solutions and Controls / Automation/Virtual Instrumentation based software solutions to Utilities/ Government / private organizations in India for the last 3 preceding years' work awards/ purchase orders to be provided.	Work order or Purchase order of the same to be Submitted as documentary evidence				
4	The Bidder or Consortium should have delivered IIOT/SCADA Based Solutions to Govt Sector/industries	Work order or Purchase order of the same to be T/SCADA Based Solutions to Govt  Work order or Purchase order of the same to be Submitted as documentary evidence				
5	The bidder shall not have been blacklisted by any Government agencies/ Utilities/ Departments at the time of bidding.	<ul><li>a) A self-declaration by the Bidder as per format specified to be submitted.</li><li>b) In case of consortium, each member will need to submit the declaration.</li></ul>				
	EoI "HITECH POLYHOUSES"					
Eval	Evaluation Criteria Points					
1	(i) Specific prior Experience of the Bidder - Bidder in its name should have in the last Three years.					
priva	a) Has successfully deployed or implemented across Government / Semi Government / private organizations of value not less than ₹400 Lakhs on deployment of complete or part of this solution across all installations in a single order.					

If the value is between ₹200 to ₹400 Lakhs	10
b) Has implemented or deployed 3 or more projects / Trainer modules related to at least 5 of the following technologies:Electrical Utilities, Solar, Motor Generator systems, Greenhouse, simulation, Cloud infrastructure.	
If less than 3 projects with combination of at least 3 technologies but more than 3 projects	
Sub- Total	50
(ii) Training Centre CAPABILITIES	
a) Has successfully deployed or implemented projects related to LabVIEW more than 100 Lakhs in Govt Research Institutes / IITs / NITs / Deemed Universities	
If the value is between 50 to 100 Lakhs	5
b) Has developed learning modules and content for Technical training programs of Govt/Private organizations	
c) Has developed monitoring platform software to represent Climatic Zone Creation in Greenhouse	
SUB- TOTAL	20
(iii) Qualifications and Competence	
a) Has filed patents or published papers in reputed national/international conferences/journals on topics related to this project	15
b) Has delivered at least 3 IT Infrastructure solutions	10
c) Has delivered solutions related to Teaching &Training OR Monitoring/SCADA system related to this project	
SUB- TOTAL	30
TOTAL	100

# SCOPE OF WORK: HITECH POLYHOUSES

# TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP:

The Design, Engineering, Manufacture, Supply, Installation, Testing, Software Source Code based on LABVIEW and performance of the equipment shall be in accordance with latest appropriate IEC/Indian Standards. Project to be completed within **180 Days** from the Award of the contract and also maintain digital mode of communication in the form of PERT/BAR chart reporting structure to track the project progress on timely basis.

The specifications of the components should meet the technical specifications mentioned in all Section below. Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the plant.

**Note:** All Design Documents & Source Codes Based on LABVIEW to be handed over to DEI after project Completion & Training.



Proposed site view of the proposed project

# POLYHOUSES SPECIFICATIONS:

S.No.	Items Name with Technical Specifications	Unit
1.	NATURALLY VENTILATED POLYHOUSE (2x1000m <sup>2</sup> =2000m <sup>2</sup> )	02 nos
	Total Area: 2000m <sup>2</sup>	
	STRUCTURE: All galvanized steel is used and design as per IS875 standards to End wall and side wall framing Aluminum corner trims, aluminum ridge bar and Galvanized gutter trim Brackets & fasteners as required to assemble frame. This includes all the elements required for joining and water tighten components (such as fittings, clamps, screws and nuts plated against corrosion). (1 Complete Set).	
	<b>DOUBLE DOOR ROOM:</b> Double Door Room- of size $2.1 \text{m} \times 2.1 \text{m} \times 2.43 \text{m}$ (L ×W×H) covered with 200micron polyfilm. 1 No	
	<b>DOOR: Size:</b> $1.9m \times 0.91m \log \& \text{ wide, door covered with } 200 \text{ micron polyfilm sheet.}$	
	<b>CLADDING:</b> Attaching the Plastic on Roof & Side walls of Polyhouse by 200 micron UV stabilized poly film having 85% light transmission, multi layered, anti-drip.	
	<b>DRIP IRRIGATION AND FOGGER SYSTEM:</b> The system is provided with pressurized drip irrigation system with Filter, Valve, Fertilizer pump, Air valve, Pressure relief valve, Pressure gauge, Head unit assembly with PVC fitting & Water tanks.	
	<b>VENTILATION SYSTEM:</b> Side Ventilation: PH. long x 2 Nos. Roll-up plastic curtains, open able to 2 m. in height (open from down to up) on two sides with crank mechanism. 40 mesh nylon insect-screen (UV stabilized) to be fixed inside the curtain on sides. Top Ventilation: Fixed Ridge Ventilation 1 m. to 1.2 m. covered with 50 mesh nylon insect net.	
	NATURAL COOLING SYSTEM: Efficient natural cooling system with non-corrosive material	
	<b>CIVIL WORK:</b> Structure will be Raised on CC (concrete cement) blocks of Size: 1'×1'×2'. Floor: Natural soil-soil improvement and soil health	
	<b>CCTV</b> with control live location on mobile	
	One year Agronomist service	

	Fans and Pad for cooling system				
S.No	Part Name	Description			
1.	Fans	The fan blades and frame are to be made of non-corrosive materials like aluminum / stainless steel. The uniform distribution of water on pad is to be maintained.			
2.	Cooling Pad (BIS specifications)	Cellulose cooling pad with appropriate size efficient to cool the polyhouses			
3.	Civil work	Construction of brick wall with duly plastered on both sides.			
4	Electrical control panel	Consisting of MCB, switches, RYB Indicator, panel, Voltmeter, MS body duly painted etc. (for fan and pad). Al the electrical gadgets and appliance used must meet BIS standards			
5.	Water tank	Multi layered plastic water tank for cooling pad			
6.	Climate control system				
A	Fan Pad System	Numbers of fan depends upon size of Fan-fad house, and it should be capable of exhausting air volume in one minute.  Exhaust Fans – 50"however it depends upon size of fan-pad house with louvers, 1.5 HP – 3 phase ISI standard electric motor.  Cellulose cooling pads of 1.8 meter with 100 mm / 150 mm thickness covering the area properly, PVC water distribution system, screen / disc filter, valve, and pumps, etc.  Control panel with manual operation, temp and humidity sensors.  The necessary digital controller with sensory device & accessories of standard quality as per requirement should be provided to operate the fan & pad system for controlling temperature& humidity inside the Green house.			

В	Fogging System	✓ In consist of four-wayanti-leak fogger 28 of flow rate (working pressure should be mentioned at
		which we will 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 6 kg / cm2, valves, filter,
		pump, panel with volt meter, MCB, relay, temp and humidity sensor etc. complete application rate 3 mm/hr.

#### **WARRANTY**

#### **MODULE MOUNTING STRUCTURE:**

The module mounting structure is required to be made of hot dip galvanized MS/ Aluminum angles of required size as per requirement. All the nuts, bolts are made of good quality SS. Modules shall be mounted on the tin/Diana rooftop of three adjacent buildings. Facilities must be provided for cleaning of modules by providing water pipes and tap for every row or column and stair (MS) must be provided to reach each rooftop. Space must be provided in between rows for proper maintenance and cleaning. Mounting Structure must be designed to withstand all weights of modules and cleaner and to withstand wind speed of 150km/hr. Tilt angle of modules south facing should be 22-degreeadjustment, and therefore array should be designed to have uniform tilt from top to bottom row and if necessary additional structure be provided. Aluminum/MS clamps, bracket, L foot hook or any other

Items required must be of good quality. Anti-rust Nut& Bolts must be used for modules

#### TECHNICAL SPECIFICATION OF MODULE MOUNTING STRUCTURE:

Specification: As per IS Mounted frame parallel to sloped roof surface:

Structure to be capable of withstanding a wind load of 150 km/hr

Angle of inclination designed to suit site requirement. The mounting structure details may be understood well by site visit.

#### ARRAY SUB JUNCTION BOX & MAIN JUNCTION BOX:

The Array Junction boxes shall be dust, vermin and waterproof and made of FRP / powder coated Aluminum with full dust / ABS / Thermo Plastic. The Junction Boxes confirms to IP 65 standard and IEC 62208. J. Bs have hinged door with EPDM rubber gasket to prevent water entry. The terminals shall be connected to Cupper bus bar arrangement of proper size. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. All the wire/cables must be terminated through cable lugs. The J. Bs shall be such that input & output termination can be made through suitable cable gland. Suitable marking shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. Each J. Bs have suitableearthing provision. It will be placed at 5 feet height or above as per site requirement for easy accessibility. Each Junction Box shall have suitable arrangement monitoring and disconnection for each of the groups.

#### **CABLES:**

All the cables are Type: PVC insulated and sheathed Materials: All DC Cables are Copper & AC Cables are

Aluminum Working voltage: Up to 1100 V State voltage: 650 V/1.1 KV Color: To suit Red, Black, Blue Temperature: -15 deg. C to + 70 deg. C Standard: IS 1554 part -1/694-1990 Cable Size &Schedule: as per attached sheet 10 LIGHTNING AND OVER VOLTAGE PROTECTION SYSTEM: The SPV Power Plant is provided with lightning and over voltage

protection connected with proper earth pits. The lightning conductor is made of 20-25 mm diameter, 3000-3500 mm. long GI spike as per provisions of IS. The lightning conductor is grounded through 25 mm. X 5 mm. thick GI strip with earth pit. There shall be required no of suitable lightning arrestors installed in array field.

#### **EARTHING SYSTEM:**

Each array structure of the PV yard should be grounded properly. In addition, the lightning arrestor should also be provided inside the array field. Provision should be kept be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at time of maintenance work. All metal casing/ shielding of the plant should be thoroughly grounded in accordance with IEC acts/ IE Rules. PCU ACDB & DCDB will be earthed properly. Earthing for array and distribution systems and power plant equipments are made with GI pipe and copper flat of suitable size 2000-3000 mm. long 25-30 mm. diameter including accessories and using charcoal and salt as per IS3043. The array structure is grounded to earth pit through 25 mm X 5 mm. copper strip.

#### FIRE EXTINGUISHER:

BIS standard Portable fire extinguisher with sand bucket and sand pits will be provided in the control room & battery room for fire caused by electrical short circuits.

# **SPECIFICATION OF SAND BUCKETS:**

The sand bucket to be wall mounted made from at least 24 SWG sheet with bracket fixing on wall conforming IS 2546. Sand buckets should be with curved bottoms.

# **SPECIFICATION OF DANGER PLATES:**

Danger plate to be installed wherever require as per Indian IE rule. The Danger plate should be vitreous enameled white on both sides, and with inscription in signal red colours on front side as required. The inscription should be in hindi and English. The details specifications are as follows: - 1. Size: 200 mm X 150 mm X 2 mm. 2. Material: M.S

## SPECIFICATION OF EXHAUST FAN:

The exhaust fan shall be fitted in the battery room and the control room. The exhaust fans shall be 250 mm in diameter and suitable for AC 230 V, 50 Hz supply. SPECIFICATION OF WIRING MATERIALS Control room wiring to be done by casing capping type 2C x 2.5 Sq. mm PVC insulated 1.1 KV grade Cu wire.

**Annexure-II** 

List of Plants for Polyhouse cultivation

List of	Plants for Polynouse cultivation	
S. No.	Plant name	
1	Broccoli	
2	Capsicum	
3	lettuce	
4	Arugula(Rocket Salad)	
5	Celery	
6	Parsley	
7	Baby corn	
8	Squash	
9	English cucumber	
10	Cherry Tomatoes	
11	Coriander (Seasonal)	
12	Carrot purple	
13	Muskmelon (Seasonal)	
14	Brinjal (Seasonal)	
15	Cabbage purple	
16	Asparagus	
17.	Aromatic plants a. Palmarosa b. Lemon grass c. Lavender d. Mint e. Khas f. Rose g. Tulsi	

Registrar Dayalbagh Educational Institute Dayalbagh, Agra-282005

#### **General Terms & Conditions**

Note: Bidders must submit the following primary information. Please do produce the related documents whenever required by the Institute.

- 1. Trade License/Company Registration No.
- 2. Goods / Service Tax Regn. No.
- 3. Income Tax PAN No.
- 4. Firm's Bank A/c details
- 5. Warranty and Support: for Hardware and Software should be explicitly mentioned.
- 6. Bidders should be OEM/Authorized partner/Authorized dealer of OEM.
- 7. The Institute reserves the right to place order for each job to single/separate vendor(s) if necessary.
- 8. In case opening date of Tender happens to be holiday, tender will be received and opened on the next working day at the same time and same place. EoI received after the closing date will not be entertained.
- 9. The Institute is not bound to accept the lowest rate or any other offer and the acceptance of the offer is entirely at the discretion of the Committee.
- 10. All purchases are subject to the approval of the Governing Body of the Institute.
- 11. The Institute reserves the right to select certain items in single or multiple units and reject the others or all as mentioned in the schedule and to revise or alter the specifications before acceptance of any EoI and accept or reject any or all EoI, wholly or partly or close the EoI without assigning any reason whatsoever.
- 12. Arbitration and Laws: In case of any dispute or difference arising out of or in connection with the EoIconditions / order and Contract, the Institute and the Supplier will address the dispute / difference for a mutual resolution and failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the Institute. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Agra only. The resolution of the Arbitrator shall be final and binding on both the parties.
- 13. Jurisdiction: The courts at Agra alone will have the jurisdiction to try any matter, dispute or reference between parties arising out of this EoI /Bids/Proposal. It is specifically agreed that no court outside and other than Agra court shall have jurisdiction in the matter.