DIRECTORATE
AGRICULTURAL ENGINEERING
SINDH HYDERABAD

No. DAE /Stores-970/ 3727 /17
Hyderabad dated the: 14-11-2017

NOTICE FOR THE PRE-QUALIFICATION OF FIRMS FOR THE INSTALLATION OF CONTROLLED ATMOSPHERIC STORE & HOT WATER TREATMENT PLANT

Director Agriculture Engineering Sindh Hyderabad has received funds from Government of Sindh for the Project/Scheme ADP # 32 (2017-18) "Preservation and Storage Facility of Fruits & Vegetable through Hot Water Treatment & Controlled Atmospheric Store on Subsidy to Farmer in Sindh" Scope, Estimated Cost and other details are as under:-

(i) **Scope:** Preservation of Fruits & Vegetables in Sindh.
(ii) **Estimated Cost:** Rs. 238.027 million
(iii) **Project Period:** up to 30th June 2018.

Eligibility: Valid Registration from Sindh Revenue Board and or Federal Board of Revenue, which ever in applicable having valid registration certificates and registration of PEC in the relevant categories.

Pre-qualification documents: Interested firms having sufficient expertise in the installation of Controlled Atmospheric Store and Hot Water Treatment Plants can obtain the pre-qualification documents from the office of Director Agriculture Engineering Sindh Block "B" Shahbaz building Hyderabad, On payment of non-refundable fee of Rs. 2000/- for Controlled Atmospheric Store & Rs. 1000/- for Hot Water Treatment Plant. The pre- qualification documents can also be downloaded from the websites of Agriculture, Supply & Prices Department, Government of Sindh and SPPRA authority and submitted along with the tender fee as indicated above.

Documents can be dispatched through Courier service on the written request for which return envelope should be provided with the application however, under no circumstances the Procuring Agency will be responsible for late delivery or loss of the documents so mailed.

Dead line of Issuance of Documents: Documents will be issued to interested firms from date of publication in Newspaper / SPPRA Website till 12.12.2017 upto 12:00 Noon.

Dead line of Submissions: Documents duly filled and attached with relevant certificates must reach on the address mentioned above on or before 12.12.2017 upto 12:30 pm and will be opened on same date at 01:00 pm by the Procurement Committee in the Committee Room of Director Agricultural Engineering Sindh Hyderabad. In case chairman of Procurement committee is not available the document can be submitted on next day and opened accordingly at same time & Place.

Interested firms should submit their inquires/applications/documents to the following:-

Address	Director Agriculture Engineering Block "B" Shahbaz building Sindh Hyderabad
Telephone No	022-9200059
Fax No.	022-9200077
Email	Director.dae@gmail.com
Focal Person	Deputy Director (Mech)

Procuring Agency may reject any or all applications subject to the relevant provisions of Sindh Public Procurement Rules 2010 (amended 2013 & 2017).

Applicants will be informed regarding the result of the evaluation of applications in due course of time and only the firms who have been pre-qualified shall be entitled to participate further in procurement proceedings.

DIRECTOR
AGRICULTURE ENGINEERING SINDH
HYDERABAD

GOVERNMENT OF SINDH
AGRICULTURE, SUPPLY &
PRICES DEPARTMENT

NOTIFICATION

No.13(347)SO(DEV:)/2013: In Supersession of this department's Notification of even number dated 30.11.2016, in pursuance of Rule-7 of SPP Rules, 2010, Government of Sindh, Agriculture, Supply & Prices Department is pleased to reconstitute a Procurement Committee for the schemes / Projects of Agriculture Engineering Sindh with following composition and Terms of References:-

III. COMPOSITION:

1.	Director, Agriculture Engineering Sindh, Hyderabad.	Chairman
2.	Director, Sindh On Farm Water Management, Hyderabad Division.	Member
3.	Representative of Industries & Commerce Department, Government of Sindh, Karachi	Member
4.	District Accounts Officer / Representative of District Accounts Officer, Hyderabad.	Member
5.	Deputy Director (Headquarter), Agriculture Engineering Sindh, Hyderabad	Member/Secretary

IV. Terms of References:

- Prepare bidding documents;
- Carryout Technical as well as Financial evaluation of the bids;
- Prepare evaluation report as provided in Rule-45 of SPPRA;
- Make recommendations for the award of Contract to the competent authority and;
- Perform any other function ancillary and incidental to the above.

SECRETARY TO GOVT. OF SINDH

No.13(347)SO(DEV)/2013 Karachi, dated the 06-02-2017

A copy is forwarded to information & necessary action to:

- The Secretary to Government of Sindh, Finance Department, Karachi.
- The Secretary to Government of Sindh, Industries Department, Karachi.
- The Managing Director, SPPRA, Karachi.
- The Director General, Agricultural Engineering & Water Management Sindh, Hyderabad.
- All Members of Committee.

(ABDUL AZIZ CHANNA)
DEPUTY SECRETARY (TECH:)

C.c. to:-

1- P.S. to Minister, Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.

2- P.S. to Secretary, Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.

GOVERNMENT OF SINDH
AGRICULTURE, SUPPLY &
PRICES DEPARTMENT

NOTIFICATION

No.13(347)SO(DEV-)/2016 In supersession of this Department Notification of even number Dated 22.3.2013 and in compliance with Rule 31 of SPP Rules, 2010, Government of Sindh, Agriculture, Supply & Prices Department is pleased to re-constitute a Committee for Complaint Redressal with the following composition and terms of reference:-

I. COMPOSITION:

1-	Director General, Agricultural Engineering & Water Management Sindh, Hyderabad.	Chairman
2-	Col. (Rtd.) Zia Siddiqui, (An Independent Professional)	Member
3-	Representative of Office of the Accountant General Sindh, Karachi	Member

II. Terms of References:

i. Committee may examine the complain of bidder as per SPPRA Rules.

ii. The Complaint Redressal Committee upon receiving a complaint from an aggrieved bidder may, if satisfied:

a. Prohibit the procurement committee from acting or decision in a manner inconsistent with these rules and regulations;

b. Annul in whole or in part, any authorized act or decision of the procurement committee; *and*

c. Reverse any decision of the procurement committee or substitute its own decision for such a decision

Provide that the Complaint Redressal Committee shall not make any decision to award this contract.

iii. The committee shall announce its decision within seven days. The decision shall be intimated to the bidder and the Authority within three working days by procuring agency. In case of failure of the committee to decide the complaint, the procuring agency shall not award the contract.

iv. The procuring agency shall award the contract after the decision of the Complaint Redressal Committee.

v. Mere fact of lodging of a complaint shall not warrant suspension of the procurement proceedings.

DR. SAEED AHMED MANGNEJO
SECRETARY TO GOVT. OF SINDH

Contd. P/2

P/2

4499

No.13 (347) SO (DEV:)/2017. Karachi, dated the 05-01-2017

A copy is forwarded for information & further necessary action to:

1. The Principal Secretary to Governor of Sindh, Karachi.
2. The Principal Secretary to Chief Minister, Sindh, Karachi.
3. The Accountant General Sindh, Karachi.
4. The Managing Director, Sindh Public Procurement Regulatory Authority, Karachi.
5. The Additional Secretary (Staff) to Chief Secretary, Sindh, Karachi.
6. The Director General, Agricultural Engineering & Water Management, Sindh, Hyd.
7. The Director General, Agriculture Extension Sindh, Hyderabad.
8. The Director General, Agriculture Research Sindh, Tandojam.
9. Members of the Committee.

(ABDUL AZIZ CHANNA)
DEPUTY SECRETARY (TECH.)

C.c. to:

1- P.S. to Minister Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.

2- P.S. to Secretary Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.

DIRECTOR GENERAL (AE&WM) SINDH HYDERABAD

2.70
1/1

ANNUAL PROCUREMENT PLAN OF DIRECTORATE AGRICULTURE ENGINEERING SINDH HYDERABAD FOR FISCAL YEAR 2017-18

Rs. in Million

Sr. No.	Description of Procurement	Quantity (Where Applicable)	Estimated Unit Cost (Where Applicable)	Estimated Total Cost	Funds Allocated	Source of Funds (ADP / Non-ADP	Proposed Procurement Method	Timing of Procurement				Remarks
								1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	
1	ADP # 28 Provision of Assistance to Farmers on Purchase of Wheel Type Tractors Phase-IV (SDG # 2)	5492 Nos. Wheel Type Tractors	-	Rs. 1500.0 Million	Rs. 1500.0 Million	ADP	Pre-qualification of Tractors Manufacturers	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
2	ADP # 29 Provision of Solar Water Pumps / Tubewells on Subsidized Rate to Farmers in Sindh. (Revised) GOS Share Rs. 802.00 Million Farmers Share Rs. 198.00 Million Total Rs. 1000.00 Million. (SDG # 2, 6)	138 Nos. Solar Water Pumps	-	Rs. 563.858 Million	Rs. 563.858 Million	ADP	Pre-qualification of Contractors	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
3	ADP # 30 Replacement of Earth Moving Machinery Phase-III (SDG # 2)	32 Nos. Bulldozers & Allied Transportation Equipment	-	Rs. 600.0 Million	Rs. 600.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
4	ADP # 31 Subsidy Assistance on Agriculture Implements for Farm Mechanization Phase-II. (SDG # 17)	555 Nos. Various Agriculture Implements	-	Rs. 60.0 Million	Rs. 60.0 Million	ADP	Pre-qualification of Manufacturer / Supplier	-	✓	✓	✓	The different of cost would be adjusted through re-appropriation All Procurement under SPPRA Rules and subjected to the Release of funds.
5	ADP # 32 Preservation and Storage Facility of Fruits & Vegetable through Hot Water Treatment & Controlled Atmospheric Store on Subsidy to Farmers	02 Nos. Hot Water Treatment Plant 02 Nos. Controlled Atmospheric Stores	-	Rs. 336.00 Million	Rs. 242.027 Million	ADP	Pre-qualification of Manufacturer / Supplier	-	-	✓	✓	All Procurement under SPPRA Rules and subjected to the approval of Scheme and release of funds.

Sr. No.	Description of Procurement	Quantity (Where Applicable)	Estimated Unit Cost (Where Applicable)	Estimated Total Cost	Funds Allocated	Source of Funds (ADP / Non-ADP	Proposed Procurement Method	Timing of Procurement				Remarks
6	**ADP # 34** Provision of Assistance to Farmers on Purchase of Wheel Type Tractors Phase-V (SDG # 2)	1832 Nos. of Wheel Type Tractors	-	Rs. 500.0 Million	Rs. 500.0 Million	ADP	Pre-qualification of Tractors Manufacturers	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
7	**ADP # 35** Provision of Power Drilling rigs Machine on Hire Charges basis to Farmers in Sindh (SDGS # 1, 2, 6)	01 No. Power Drilling Rigs & Allied Transportation Equipment	-	Rs. 130.0 Million	Rs. 100.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
8	**ADP # 37** Strengthening Agricultural Engineering through Capacity Building of Staff, Youth Entrepreneurship through Technology Support (SDGS # 1, 2, 6)	Procurement of Furniture, Machinery & Equipments for the 14 Agriculture Engineering Workshops	-	Rs. 200.0 Million	Rs. 200.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
9	**ADP # 38** Provision of Combined Harvester, Wheat and Paddy on (50%) Subsidy to Farmers in Sindh (SDGs # 17) (GOS Share Rs. 300.00 Million + Rs. 284.500 Million)	08 Nos. Combined Harvesters + 10% Spare Parts	-	Rs. 75.0 Million	Rs. 75.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.

DIRECTOR
AGRICULTURE ENGINEERING SINDH
HYDERABAD

PRE QUALIFICATION DOCUMENT

GOVERNMENT OF SINDH

Name of Department :	**Director Agriculture Engineering Sindh Hyderabad**
Name Project /Scheme:	**ADP # 32 (2017-18) Preservation and Storage Facility of Fruits & Vegetable through Controlled Atmospheric Store on Subsidy to Farmers. (Installation of Controlled Atmospheric Store on Turnkey basis).**
Name of Procuring Agency :	**Director Agriculture Engineering Sindh Hyderabad**
Documents submitted by:	_____

DIRECTORATE
AGRICULTURAL ENGINEERING
SINDH HYDERABAD

No. DAE /Stores-970/ 3727 /17
Hyderabad dated the: 14-11-2017

NOTICE FOR THE PRE-QUALIFICATION OF FIRMS FOR THE INSTALLATION OF CONTROLLED ATMOSPHERIC STORE & HOT WATER TREATMENT PLANT

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Eligibility: Valid Registration from Sindh Revenue Board and or Federal Board of Revenue, which ever in applicable having valid registration certificates and registration of PEC in the relevant categories.

Pre-qualification documents: Interested firms having sufficient expertise in the installation of Controlled Atmospheric Store and Hot Water Treatment Plants can obtain the pre-qualification documents from the office of Director Agriculture Engineering Sindh Block "B" Shahbaz building Hyderabad, On payment of non-refundable fee of Rs. 2000/- for Controlled Atmospheric Store & Rs. 1000/- for Hot Water Treatment Plant. The pre- qualification documents can also be downloaded from the websites of Agriculture, Supply & Prices Department, Government of Sindh and SPPRA authority and submitted along with the tender fee as indicated above.

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Dead line of Submissions: Documents duly filled and attached with relevant certificates must reach on the address mentioned above on or before 12.12.2017 upto 12:30 pm and will be opened on same date at 01:00 pm by the Procurement Committee in the Committee Room of Director Agricultural Engineering Sindh Hyderabad. In case chairman of Procurement committee is not available the document can be submitted on next day and opened accordingly at same time & Place.

Interested firms should submit their inquires/applications/documents to the following:-

Address	Director Agriculture Engineering Block "B" Shahbaz building Sindh Hyderabad
Telephone No	022-9200059
Fax No.	022-9200077
Email	Director.dae@gmail.com
Focal Person	Deputy Director (Mech)

Procuring Agency may reject any or all applications subject to the relevant provisions of Sindh Public Procurement Rules 2010 (amended 2013 & 2017).

Applicants will be informed regarding the result of the evaluation of applications in due course of time and only the firms who have been pre-qualified shall be entitled to participate further in procurement proceedings.

DIRECTOR
AGRICULTURE ENGINEERING SINDH
HYDERABAD

4.0 Section I. Instructions to Bidders/Applicants (ITB).

Clause 1: The Installation firm shall enclose the (one original and (1 One) duplicate copy) of the documents in a sealed.

Envelope which shall:-

(a) bear the name and address of the Applicant;

(b) be delivered by hand or through courier/registered mail to address mentioned in advertisement for pre-qualification or in document; and

(c) be clearly marked "Application for Pre-qualification for Preservation and Storage Facility of Fruits & Vegetable through Controlled Atmospheric Store on Subsidy to Farmers.

Clause 2: If the envelope is not sealed and marked as required, the procuring agency will assume no responsibility for the misplacement or pre-maturing opening of the document.

Clause 3: Document shall be prepared in the English language. In case of ICB, the information provided in any other language shall be accompanied by English translation also.

Clause 4: Installation firm must respond to all questions and provide complete information as advised in this document. Any lapses to provide essential information may result in dis-qualification of the Installation firm.

Clause 5 Clarification and Modification of Documents (SPP Rule 23).

Installation firm, who has obtained documents, may request for clarification of contents of the bidding document in writing, and respond to such queries shall be made in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid.

Clause 6 Addendum: At any time prior to the deadline for submission of documents, the agency may amend the Prequalification Document by issuing addenda. Any addendum issued shall be part of the Prequalification Document and shall be communicated in writing to all who have obtained the prequalification document.

Clause 7 Deadline for submission of Documents (SPP Rule 22 & 24):

Documents shall be received by the agency at the address Director Agriculture Engineering Block "B" Shahbaz building Sindh Hyderabad, **Tel # 022-9200059, Fax # 022-9200077**, not later than the ***12-12-2017 at 12:30 PM.*** The procuring agency may, at its discretion, extend the deadline for the submission of documents by amending the Prequalification Document, and in which case all rights and obligations of the Agency and the Installation Firm subject to the previous deadline shall thereafter be subject to the deadline as extended.

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OF CONTRACTOR

Clause 8 Evaluation (Rule 27 (2):

Installation firm general and particular experience, personnel, machinery & equipment capabilities and financial position, as demonstrated by the Applicant's responses in the prescribed forms will be evaluated as per evaluation criteria given in the document. The Procuring Agency reserves the right to waive minor deviations, if these don't materially affect the capability of an applicant to perform the contract. Sub-contractor's experience and resources shall not be taken into account in determining the Installation firm compliance with the qualifying criteria. However, Joint Venture experience & resources shall be considered. Consortium or Association of firms will be considered for similar treatment as in case of Joint Venture.

Clause 9 Clarification of Prequalification Information (Rule 43):

To assist in the evaluation of information, the agency may, at its discretion, ask any Installation firm for a clarification of any information which shall be submitted within a stated reasonable period of time. Any request for clarification shall be in writing. If any Installation firm does not provide clarifications of the information requested by the date and time set in the agency's request for clarification then application of the Installation firm may be rejected.

Clause 10 Verification of Prequalification Information (Rule 28 (1d)):

Verification of the information provided by the pre-qualified/short listed Installation Firm in the submissions for prequalification may be made. In case the information is found to be wrong or incorrect in any material way or Installation firm is found to be lacking in the capability or resources to successfully perform the contract, then it shall not be pre-qualified.

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OF CONTRACTOR

Section II: Evaluation/Qualification Criteria.

S#	Description	Responsive (Yes)	Non Responsive (No)
1	Type of Bidders		
2	Complete Address with Telephone Numbers & email address of local partners.		
3	Complete Address with telephone Numbers & email of Turnkey Partner and Foreign Partner.		
4	Registration Certificate of PEC in a category of C3 or above, in a sub categories of BC01, ME01 & ME06.		
5	Registration Certificate from Income Tax (FBR) NTN of Local Partners.		
6	Registration Certificate from Sales Tax (FBR) Local Partners.		
7	Registration Certificate from Sindh Revenue Board (SRB) Local partners.		
8	Registration of Chamber / Federation / SECP (Valid Certification)		
9	Evidence of completing Turnkey basis assignment in last three years (At-least one) Local/abroad. (Evidence from Capital manufacturer is acceptable).		
10	Evidence indicating the firm is in business since last 3 years Local / Abroad.		
11	Evidence from the Turnkey Partner of its Establishment from chamber of commerce.		
12	Evidence of Sole representation /Certificate/letter from the Turn key Partners.		
13	Provision of After sales & Service (Provide complete details of Capabilities).		
14	Provision of Warranties on Installed Equipment / Structure.		
15	Provide complete Mechanism / Road Map for the Installation		
16	Standards / Certifications from IEC / ISO or equivalent		
17	Audited Financial Reports of last three years.		
18	Detailed Presentation for the execution of turnkey project.		

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OF CONTRACTOR

TERMS OF REFERENCE

- The bidder / firm will prepare & submit a detail design & diagram alongwith list of equipment & machinery to be installed with quantities, in confirmation of the approved objectives of the scheme.

- The bidder will install the complete system on turnkey basis under supervision of designated functionaries & beneficiaries.

- The bidder will provide a training to give exposure to the staff of Agriculture Engineering to this new technology in order to gain firsthand knowledge of this system in Operation & Maintenance local as well as abroad.

- The bidder will also provide necessary survey to the designated staff of the plant in Operation & Maintenance.

- The bidder will provide Operation & Maintenance responsibilities for at-least five years.

- The bidder is also required to provide & meet necessary warranty obligation for the plant & machinery for at-least one year from the date of commencement of commercial operation slight chances in the design & drawings given in the documents are acceptable provided there is absolutely no chance in the objectives of the scheme.

- The beneficiary farmer is required to pay 25% cost of the plant & machinery, whereas 80% cost of the plant & machinery would be provided by the department as subsidy.

- The following mode of payment would be adopted for the scheme:-

    - ***Ist Installment*** 20% farmer advance would be paid to the firm in advance against a bank guarantee as mobilization advance.

    - ***2nd Installment*** 20% of Total Cost (25% of the Government Subsidy 80%) upon completion of flooring on verification by the committee.

    - ***3rd Installment*** 20% of Total Cost (25% of the Government Subsidy 80%) upon arrival of machinery & equipment at site on verification by the committee.

    - ***4th Installment*** 20% of Total Cost (25% of the Government Subsidy 80%) upon completion of structure & installation of machinery & equipment on verification by the committee.

    - ***5th Installment*** 20% of Total Cost (25% of the Government Subsidy 80%) upon completion of Plant successful handed over to the beneficiary farmer in full functionality on verification.

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OF CONTRACTOR

- Firms / bidders are also required to submit a bid security at a rate of 2% of their bid cost upon their pre-qualification at the time of submitting their financial proposal as per provision of SPPRA Rules.

- Firms / bidders are also required to submit 10% performance security at the time of agreement before the issuance of work order.

- Firm / bidder are also required to sign as integrity pact as required by the SPPRA.

- All participating firms are required to provide detailed presentation of their design & machinery / equipment prior to their pre-qualification.

- All participating firms are required to arrange visit for the departmental committee at location of Installed Controlled Atmospheric Store in operational state.

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OF CONTRACTOR

6.0 Section III. Application Forms:

A-I Application Submission Form

Dated: _____

The Director Agriculture Engineering Sindh Hyderabad.

Dear Sir,

Subject: ***Preservation and Storage Facility of Fruits & Vegetable through Controlled Atmospheric Store on Subsidy to Farmers.***

I..... the undersigned, being duly authorized to represent and act on behalf of ..... applies to be pre qualified for the project cited above and enclose one (1) original (together with Duplicate copy) of pre-qualification document and declare the following :

(a) I have examined and have no reservation to the Prequalification Documents, including Addenda No(s) 1 to 10, issued in accordance with ITB Clause 6.

(b) I understand that procuring Agency may cancel the prequalification process at any time and that procuring Agency is not bound either to accept any application that it may receive or to invite the pre qualified applicants to bid for the contract subject of this prequalification, without incurring any liability to the Applications.

I am agrees with following Terms & Conditions.

(i) Bids by pre-qualified applicants will be subject to verification of all information submitted for prequalification at the time of bidding;
(ii) Agency reserves the right to amend the scope and value of any contract under this project; in such event bids will only be called from pre qualified bidders who meet the revised requirement;

2. The Procuring Agency and its authorized representative(s) may contact the following person(s) for further information, if needed:

Person to be contacted: Telephone:

3. The undersigned declares that the statement and the information provided are complete, true and correct in every detail.

Signed:_____ Name:_____

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OF CONTRACTOR

A-II

1. Company Profile

Date: ----------
Contract: ----------

All individual firms and each partner of a joint venture applying for prequalification are requested to complete the information in this form.

1	Name of firm:	
2	Address:	
3	Telephone Fax numbers: E-mail address:	
4	NATIONALITY OF OWNERS.	
	Name:	Country:

SIGNATURE & STAMP
OF CONTRACTOR

A-III

2. General Experience Record

(i) Details of Contracts of Similar Nature and Complexity completed over the last 03 years

Sr. No.	1	2	3	4	5
Name of Contract:					
Name of Procuring Agency With Address, Tele, Fax.					
Nature of works and special features relevant to the contract for which applied:					
Value of the total contract in Pak/Rs:					
Date of Award:					
Date of Completion					

Attached separate Sheet if required.

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OF CONTRACTOR

(ii) Projects of similar nature and complexity in hand.

Installation firms and each partner of the joint venture should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, for which Completion Certificate has yet to be issued.

Name of Contract	Value of Contract	Name of Procuring Agency	Value of Outstanding Work (Equivalent Pak Rs. Millions)	Estimated Completion Date
1				
2				
3				

Attached separate Sheet if required.

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OF CONTRACTOR

A-IV

4 (A) Personnel Capabilities

Installation firm should provide the list of working staff involved in Installation of Similar nature projects, to meet the specified requirements stated in Section 3 (Evaluation and Qualification Criteria).

Sr. No.	Name / Qualification	Designation / Working as
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Note: - Provide *CV of the Staff.*

SIGNATURE & STAMP
OF CONTRACTOR

A-VI

6. Financial Resources.

A. Banker's Information:

Sr. NO.	Name & Address of Bank	Contact name and title	Telephone, Fax & E- Mail Address

Attach Bank Statement of Last 03 years.

SIGNATURE & STAMP
OF CONTRACTOR

Section IV. Scope of Contract: (*Description of works and Period of completion)*

WORK PLAN

S#	Description	Quantity Nos.	Period of Completion	Firm Should Tick the category
1	Installation of Controlled Atmospheric Store on Turnkey basis	02 Nos.	30th June 2018	

- Quantities indicated are subject to release of funds and choice of farmers to procure a particular category amongst the prequalified installation firm.

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OF CONTRACTOR

TECHNICAL SPECIFICATION OF CONTROLLED ATMOSPHERIC STORE

Description of Items (Tender requirement)	Company Offer
i. Installation and erection of pre-engineered building ▪ Pre engineered building of 20,000 sq ft ▪ Electrical panel room 3000 sq ft ▪ Chiller platform ▪ Foundation for Pre Engineered Building ▪ Gas tight flooring ▪ Over head and under ground water tank	
ii. Machinery & equipment: **Controlled Atmosphere Storages for 1000 Ton** ▪ 8 rooms of 14,00 x 6,60 x 6,40 H (meter) ▪ 1 0°C room of 3,00 x 4,00 x 3,00 (meter) ▪ 1 corridor of 27,00 x 5,00 x 4,00 (meter) ▪ 1 processing room 20,00 x 33,00 x 6,00 (meter) **Panelling** Prefabricated sandwich panels of polyurethane foam contained within galvanized or prepainted sheet metal. The panels are used for building the room walls and ceiling. Panels with injected joints Panel thickness 120 mm LZ/LP, surface of 2318 m^2 Panels with dry joints Panel thickness 120 mm LP/LP, surface of 196 m^2 *(for corridor)* Panel thickness 120 mm LP/LP, surface of 1134 m^2 *(for processing room)* Panel thickness 120 mm LP/LP, surface of 42 m^2 *(for 0° cold room)* Panel characteristics: Polyurethane - Average density 38-40kg/m^3 - Coefficent of thermal conductivity 0.020 W/m°K (=0,017 Kcal/mh°C) - Global coefficent of thermal conductivity (re: thickness 100mm) 0,020 W/m°K (=0,017 Kcal/mh°C) - Compression strength 1.8-2.5kg/cm^2 - Flame propagation resistance (self-extinguishing) : according to ASTM	

1692 norms - Heat and hot bending resistance : 127°C - Dimensional stability : from -50°C to + 100°C - CFC free - It does not degrade in time - It does not absorb smells Galvanized sheet metal "SENDZMIR" system. The sheet metal is suitably profiled to give the necessary stiffness to the panels. The steel used is FE PO2 GZ 150 NA according to EURONORM regulations 142-79. The sheet metal is top quality, 5/10 thick. Pre-painted sheet metal The sheet metal is suitably profiled to give the necessary stiffness to the panels. The pre-painted film is 25 ± 3 microns on the exposed surface and 5 microns on the internal surface. The base sheet metal, hot galvanized using the Sendzemir system, is of the type FE E250 GZ 200 – A conform with Euro norms 10147-92; it is phosphate and treated with primer and then painted. The colour is half brilliant white 21; the painter used is non toxic as it does not contain lead and cadmium. The global migration test results are under the maximum value accepted by the Ministerial Decree 21/03/73 and following amendments. *Hardness:* - ECCA T4 - Equivalent to "F" on the Koh-i-Noor scale. *Gloss:* - ECCA T2 - Specular gloss: 30 ± 5% measured on the GARDNER gloss meter with 60° angulation. *Forming strength:* - ECCA T7 - There are no flaws on folds with T over 2.5. *Environmental strength:* After 10 years there will be no colour difference over 8 Celiab units of measure. The CHALKING value will not be lower than "6" on the scale of ASTM D 659 regulation. The sheet metal is top quality, 5/10 thick. **Reaction to fire** The panel belongs to the class "0 (zero) – 2 (two)", conforming with the Ministerial Decree 26/6/84 und	

following M.D: 14/1/85. Assembly Accessories for injected joints – Fixing hooks; – Galvanized and/or pre-painted joint coverings; – Stiff PVC spacers; – Galvanized and/or prepainted angulars; – Screws and rivets; – Polyurethane for the joints; – All other necessary assembly components. **Assembly for dry joint panels** **Place the panels next to one another, then insert them in one another;** – In the joint insert the soft gasket or silicone to close it; – White joint coverings made of soft PVC are to be fixed on the joints, both on the internal as well as on the external face of the panel; – Angular sheets are to be assembled in the intersections between walls and ceilings, fixed with self-drilling screws or aluminium rivets; – All corners are to be filled with polyurethane foam injected using a suitable machine. **Assembly Accessories for dry joint panels** – Gaskets and/or silicone; – Galvanized and/or pre-painted angular; – Screws c/w anchors and rivets; – Polyurethane for the corners; – All other necessary assembly components.	
Gas-sealing with special paint on panels joints Gas sealing of the controlled atmosphere rooms is achieved by applying a white-coloured polymeric elastic product with high adhesion and resistance to all joints of the internal surfaces (ceilings and walls). Panel joints and ceiling and floor corners, are to be reinforced by applying a special glass-fibre tissue.	

After that a second coat is to be applied. It can withstand very high and low temperatures and is resistant to mineral acids and solvents. Water dispersing it is neither inflammable nor deflagrable. Total surface to be treated: only on joints on a total panel's surface of 2850 m². Gastight sliding doors Net span m 2,50 x 3,00 manual type. Each door consisting of: – Sturdy flat silled doorpost, made of isophtalic resin reinforced with fibre glass, suitable for food industry, grey colour; – Insulated panel made of polyurethane injected under press, density 38-40kg/m^3, thickness 100mm.; – 12/10 thick stainless steel edging; – Galvanized plasticized sheet metal coating; – Neoprene rubber sections for gastight sealing; – Electrostatically galvanized iron sliding wheels, mounted on ball bearings; – Gastight closing system with eccentric manoeuvre; – Double paned 45 x80 cm termopan inspection window (can be opened from both sides); – Prepared for installation for opening to the right or to the left; – Prepared for automation. 0° Sliding Door Net span m 2. 50 x 3,00 manual type. 0° Hinged Door Net span m 1, 20 x 2,20 manual type. Each door consists of: – Sturdy flat silled doorpost, made of isophtalic resin reinforced with fibre glass, suitable for food industry, grey colour; – Injected polyurethane insulated panel, 100mm. thick; – 12/10 thick stainless steel edging; – Galvanized plasticized sheet metal coating; – Neoprene rubber sections for gastight sealing; – Prepared for installation for opening to the right or to the left;	

– Prepared for automatism. Inspection windows Net span 60 x 80 cm. Each window includes: – Supporting frame made of isophtalic resin; – Window cast in aluminium; – Gastight locking; – Double-paned Termopan. **Sectional door Net span m 5.00 x 4.00** **Insulated sectional door with vertical action, counterweighted by a group of springs. The runners consist of galvanized angular supports, in which the side seals are inserted, and a special C-shaped profile on which the door runs by means of nylon wheels. The door also features a motor for automatic operation, completed with wall-mounted control panel.**	
Carbon dioxide scrubbing circuit Carbon Dioxide scrubber ADSO 50 BASIC Carbon dioxide absorption capacity: 50kgs. In 24 hours at 3%. The scrubber is designed to remove carbon dioxide produced by stored goods. The process takes place as follows: A blower sucks the air containing carbon dioxide from the room, forces it through a filter of molecular sieves and returns it to the storage room. When the filter is completely saturated, the regeneration with atmospheric air is carried out automatically by a valve system. Upon completion of the regeneration, the scrubber reverts back to absorption. During the regeneration phase, the oxygen left in the filtering chamber is completely removed using a special procedure. The changing of phases (absorption, regeneration and oxygen removal from the filter) occurs automatically at programmed intervals.	

Running of the scrubber running can be continuous or it can be regulated by a timer or by a computerized system. The controls are housed on an electric board mounted on the front panel of the scrubber. This unit can be connected to a U.L.O. (Ultra Low Oxygen) system. Technical specifications - Dimensions LxWxH 700x740x1925mm; - Weight 320kg; - Power consumption 680W. O_2 valves For the automatic oxygen injection into the rooms. **Air compressor** Reciprocating air compressor with receiver of suitable capacity, equipped with adjustable manostat and monitoring manometer. It provides the compressed air for operation of our pneumatic valves and humidification system.	
Oxygen reduction circuit Nitrogen Generator "PSA 16 NT" This unit is a revolutionary machine capable of producing nitrogen at high levels of purity, using the most up to date technology: molecular separation of atmospheric gases, where the major part is nitrogen (approximately 78%). The process occurs by forcing compressed air through a system of "molecular sieves" composed of two filters one of which adsorbs while the second is regenerated. In the adsorbing filter oxygen is separated and kept in the filter, while nitrogen is delivered to the room. The system is equipped with an oxygen analyzer to control the purity of the nitrogen produced. Technical specifications - Nitrogen production at 97 39,6 m^3/h;	

- dimensions: mm 1000 x 1040 x 1960 - Weight 745 kg; - Installed Power 0. 5 kW. <u>Rotative air-screw compressor 15 kW</u> Designed for continuous operation is supplied. It is complete with disoiling filters, air cooling, air filters and a modulating valve to achieve higher efficiency in the whole nitrogen production system. <u>Header</u> For 8 rooms, to centralize manual control of nitrogen injection into the rooms. <u>Gate valves</u> To be assembled on the header.	

REGULATION AND CONTROL ACCESSORIES Manometers Equipped with a 250mm water column mounted on a wood panel, for the reading of pressure variations occurring in the storage room. PVC Flap overpressure valves ø 100mm, to control pressure and vacuums occurring in the storage rooms during normal plant operation. PVC pipe sleeves Gas-tight sleeves that pass through the room walls for analysis pipes, nitrogen injection, carbon dioxide scrubbing circuit, overpressure valves, breathing bags and all necessary components for operation of the controlled atmosphere plant. Pressure breathing bags Constructed of PVC, reinforced with nylon, to compensate for the pressure occurring in the rooms during plant operation.	
Computerized Electronic Analyzer For 8 rooms, designed specifically for the analysis of oxygen and carbon dioxide in controlled atmosphere rooms. An elegant, varnished cabinet houses the following units: – 1 carbon dioxide analysis unit with infrared rays: volume range 0-10%; – 1 oxygen analysis unit with paramagnetic cell: volume range 0-25%; – integrated circuits, silicon transistors, micro relays; – 2 diaphragm pumps; – 1 flow meter with needle cock; – 1 high efficiency macrolon body filter; – 1 programming board for automatic connection of the rooms; – 8 solenoid valves assembled on the analysis header.	

Personal Computer With the following specifications: – Intel corei7 (ongoing generation) – RAM 16 GB – Hard Drive 2 to 5 TB – Branded Dell or Equivalent – Wireless keyboard & Mouse – LED 32" Dell or Equivalent – Operating system Windows 8 Registered – HP Colour Printer Carbon Dioxide and Oxygen monitoring and control Monitoring and control of carbon dioxide and oxygen in the CA-rooms will occur by means of a suitable interface equipped with special devices for connection of carbon dioxide absorbers and injection of air into the rooms.	
Computer operation The programme provides for the display of data and, at predetermined times or on request of the operator, the printing of this data. The operator will set the minimum and maximum percentage values of carbon dioxide and oxygen and the other parameters to be maintained in the controlled atmosphere rooms. The operator can request printing of the last 24 hrs, or of the last from 2 to 365 days, also graphically with different scales. Each printout will show: – Day, hour and minutes; – The number of the room under analysis; – Carbon dioxide percentage; – Oxygen percentage; – Indication of the interventions of carbon dioxide scrubbers and air injection into the rooms; – Alarm signals if the threshold values are exceeded, totally or partially. Calibration kit For the periodical calibration of the analyzer.	
COOLING PLANT Each refrigeration unit is composed as follows:	

Glycol-water refrigeration unit Each composed by two piston compressors for ammonia, with following specifications: Cooling capacity: 187 kW Glycoled solution (30%) in/out temperatures: -4/-8°C The unit is complete with oil separator with coalescent filter and heat elements, water circulation oil cooler. Receiver, filtering elements, safety valves, cut-off electric valve, refrigerant charging valves, flooded plates direct expansion evaporator, interceptor taps, steel pipes. Primary circuit electric pumps With horizontal axis, three phase electric motor, complete with manual gate valves, strainers, check valve, interceptor taps, and manometers for the glycol circulation from the tank to the refrigeration unit. Defrost service electric pumps With horizontal axis, three phase electric motor. Glycol-water storage steel tank With epoxy painting treatment, having a capacity of 7 m^3, to be charged with anticorrosive, inhibited, monoethylenic glycol solution at 30% concentration. Hanging air coolers Unit surface 320 m2, with copper/aluminium fins battery, fins space 6 mm, working with glycol-water, complete with 1 axial fan Ø 560 mm, having total air capacity of 29.200 m^3/h aluminium fairing, capacity 49,4 kW at ΔT 10°C, water defrost . Hanging air cooler Unit surface 53 m2, with copper/aluminium fins battery, fins space 6 mm, working with glycol-water, complete with 1 axial fan Ø 500 mm, having total air capacity of 7.600 m^3/h aluminium fairing, capacity 9,2 kW at ΔT 10°C, water defrost . Glycol-water feeding assemblies Composed of 3-way mixing valve (iron PN6), proportional electric actuator 0-10V with safety	

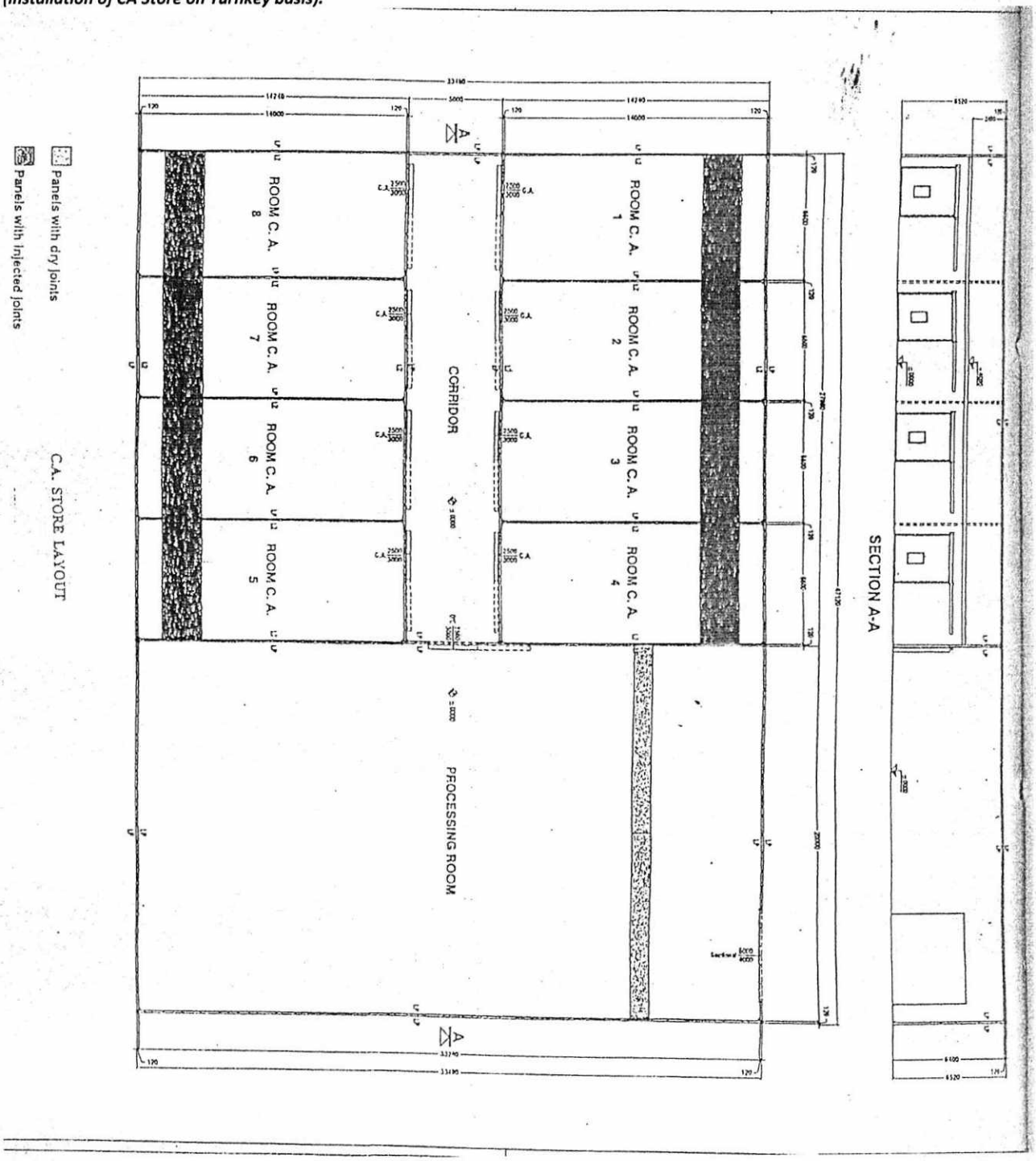
closure, electronic temperature regulator/indicator with PT100 probe, two temperature dipping probes to measure the glycol inlet-outlet temperature, ambient probe, circulation pump with check valve, pressure indicator and ball interceptor valves. General electric control board Tension 380 V / 50 Hz Auxiliary tension 220 V Command tension 24 V Rack component board complete with following devices: General magnet-thermal switch, Voltmeter and general ammeter with TA, Protection for measure devices, Transformer 380/220 V, Control transformer 220/24 V, Protection for in- and out transformers, Fuses group, Automatic valves, Main circuits supply through copper bars, Remote control switches, Auxiliary contacts block, Refrigerators control thermostat with digital indication of the tank temperature Electronic regulators of the condensation pressures, with Digital display of the values, Signalling LEDs for operation and stoppage, Glycol level control in the tank, Hour meter for compressors, ON/OFF switches, Diodes blocks, Clamps, wiring passages, cable and wiring material Computerization of the cooling plant Supervision and control of the cooling plant is achieved through a PC with our proprietary software. Monitoring of the cooling plant Indication for each room of the intervention number and operation duration of the cooling battery and of the ventilation and defrosting systems. Interfaces For the control of the cooling plant.	

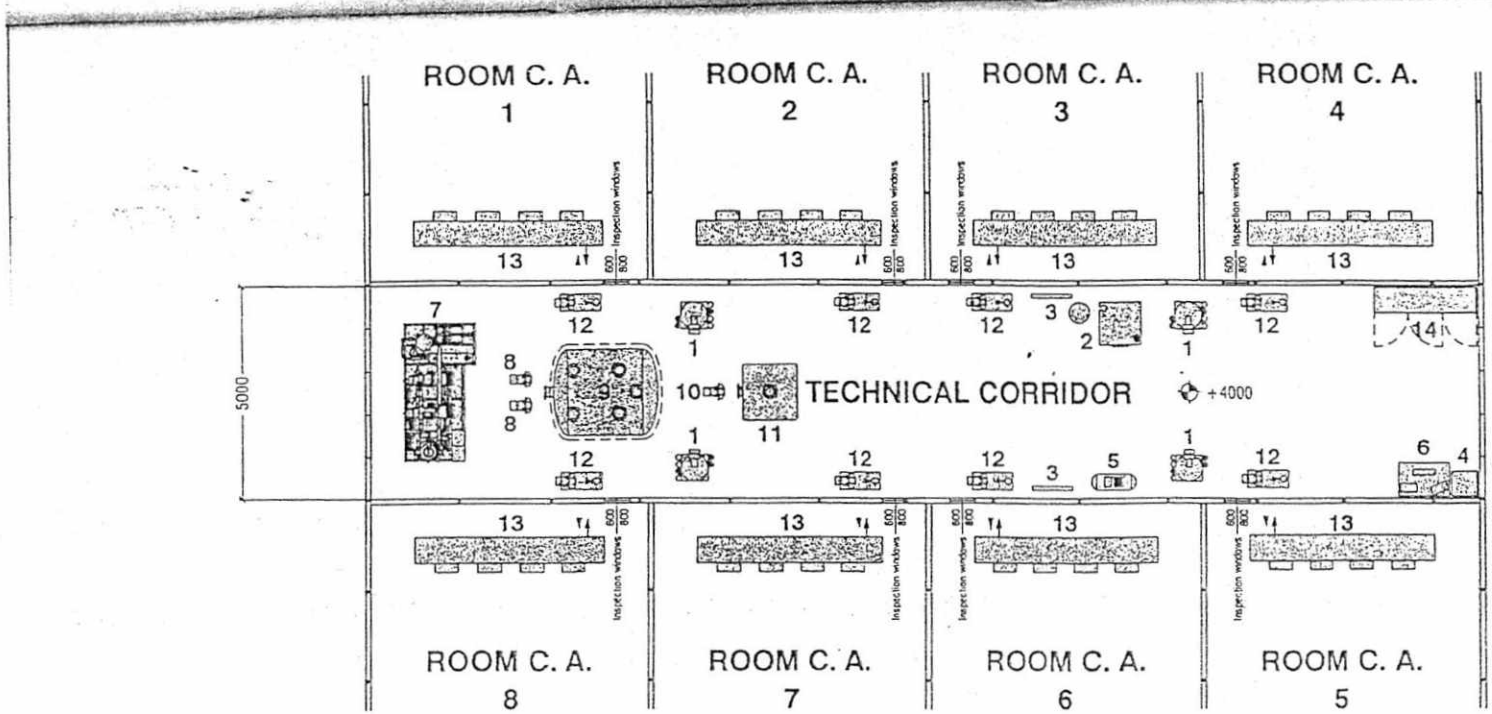
Temperature sensors 2 for each room and 2 for each mixing valve.	
Ethylene scrubbing installation Deoxyl 500 Catalitic ethylene converters *each connected to two rooms* The harmful effects of ethylene in the storage of vegetable products are generally well known. The scrubbing of ethylene from the storage room slows senescence processes, preserves the quality of the produce and reduces its sensitivity to pathogenic agents. The Deoxyl removes the ethylene present in the atmosphere, using a system of forced air recirculation on a catalytic bed kept at an average temperature of 250°C. The treatment sequence, which occurs with the help of an electric blower, sees the preheating of the air in an exchange section, heat recovery, reaction with the catalyst and final cooling. The process is highly efficient with limited energy consumption to maintain the catalyst temperature. The main advantages of the system are: - Optimal ratio efficiency/consumption - Excellent heat recovery - Simple operation - Absence of process residues (with respect to the environment) - Installation outside the room and capable of working in both regular storage and controlled atmosphere conditions. Technical specifications -Dimensions: 1220 x 750 x 1580 mm; -Weight 600kg; -Power consumption 3.8kW/h. Headers For 2 rooms, to centralize automatic control of ethylene conversion into the rooms. Pneumatic valves	

Butterfly valves mounted on the blowing and suction pipes of the rooms, complete with double effect actuator with adjustable limit switch.	
Humidification system **Air System" Humidification *for 8 rooms*** The "Air System" humidification system was designed to satisfy the need to obtain high hygrometric levels in large capacity storage rooms. Operation of the "Air System" is very simple; it is based on the nebulizing of water using compressed air. Using several simple calibrations, carried out in a full plant, optimal values of nebulized water can be achieved for each single requirement. The plant includes: - Electronic panel with intervention programmes for each single room, for the desired time - Electronic header, controlled by the operator. - Nozzles - generally installed near the refrigeration unit. This system demonstrates the soundest method of room humidification for fruit storage, uniting high circulation capacity and delicate nebulization. In addition, the plant does not require regular maintenance.	

CA PVC CONTAINERS Nr. 3 PVC Containers Nr. 1 CO2 absorber for containers Nr. 3 ethylene absorbers for containers Nr. 1 interface for the control of CO2-O2-N2 Nr. 1 Header for 3 containers for nitrogen injection Nr. 1 Header for 3 containers for oxygen injection Nr. 1 Header for 3 containers for carbon dioxide Nr. 6 Sensors for temperature Nr. 6 Sensors for Relative Humidity Nr. 2 Interfaces for sensors	
SPARE PARTS FOR GLYCOL PLANTS • Nr. 1 blower for evaporator model FAM • Nr. 1 pump Calpeda mod NM4 40/20 AE 1,1 kW • Nr. 1 3 way valves DN 40 PN6 VXF21-40 • Nr. 1 sevocontrol SQX62 24 V. 0-10 V • Nr. 1 stem heater ASZ 6.5 • Nr. 2 manometers 0-2,5bar • Nr. 1 valve UNIVERSAL 2V ball 1"½ 24V.	
SPARE PARTS FOR AMMONIA PLANT (CHILLER) • Nr. 1 motor for evaporative condenser ATC • Nr. 1 set of belts SPA L=2.360 mm (5 pcs) • Nr. 1 supply valve NH3 EVRAT 15 • Nr. 1 coil 200 V for EVRAT • Nr. 1 filter FA 15 for EVRAT • Nr. 1 Circulator UPS 25-60 • Nr. 1 valve for EVRA • Nr. 1 filter FA 15 DN15 for EVRA3 • Nr. 1 series of counters and thermal for control board for the compressor	
SPARE PARTS FOR ELECTRIC PLANT • Nr. 1 PLC room control MD 147 • Nr. 1 CY200 interface for control of CA plant • Nr. 5 sensors PT 100 • Nr. 1 humidity sensor • Nr. 2 converters for sensors PT100-4/20 ma • Nr. 1 set of spare for room control board	
Plant & Machinery for Packing/Grading line ▪ Desapping Conveyor 1.2*2.0 meter ▪ Prewashing with manual sorting ▪ Hot water Treatment ▪ Brushing/washing machine ▪ Brushes with soap spraying system.	

▪ Drying Tunnel. ▪ Connecting Belt. ▪ Sizing plant. ▪ Fruit grading system. ▪ Packing bins ▪ Electric Board ▪ Compressed air system ▪ Crane and forklift ▪ Fuel reservoir pumps and pipe fittings ▪ Hydraulic pump assemblies.	
LOCAL PLANT & MACHINERY FOR CA STORAGES: - SS and PVC pipes of different dimension - Compressor - Standby electrical generator 150KVA - Fuel Tank - Electrical Panels - Electrical fittings Design & Drawing of CA Store is attached as Annexure "A-1" Calculation of Expenditure, sheets attached as Annexure "B"	


Panels with dry joints
Panels with injected joints
C.A. STORE LAYOUT
ROOM C.A. 1
ROOM C.A. 2
ROOM C.A. 3
ROOM C.A. 4
ROOM C.A. 5
ROOM C.A. 6
ROOM C.A. 7
ROOM C.A. 8
CORRIDOR
PROCESSING ROOM
SECTION A-A



C. A. equipment	1	Adso 65 Basic
	2	Adox N2 F 200
	3	N2 header
	4	Analyzer
	5	Compressor
Cooling equipment	6	Computer
	7	Chiller
	8	Primary circuit electric pumps
	9	Glycol-water storage
	10	Defrost service electric pumps
	11	Water defrosting storage
	12	Secondary circuit electric pumps
	13	Hanging aircooler
	14	General electric control board

MACHINE LAYOUT