

TENDER DOCUMENT

FOR

**STANDALONE MULTIPLE EFFECT
SPENTWASH EVAPORATION PLANT
(SMEE)**

**FOR CONCENTRATION OF
RAW SPENTWASH**

(600 M³/DAY TO 135 M³/DAY)

(Concentration from 13.50 % to 60 % Total solids)

(Water evaporation duty minimum 19,375 Kg/hr)

OF

**VILAS SAHAKARI SAKHAR KARKHANA
LTD.,**

VAISHALINAGAR, NIVLI

TAL. & DIST. LATUR

PH. No. 02382-277622

FAX No. 02382-277631

Email: vilasugar1@gmail.com

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SECTION I : GENERAL

- 1. TENDER NOTICE**
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- 6. CHECK LIST**

TENDER NOTICE

Online Tenders in prescribed format are invited from the reputed manufacturers who are on approved list of NFCSF and who have successfully Installed and commissioned minimum two plant in India for the purpose of the following Turnkey jobs.

Design, Manufacture, Procure, Supply, erection , and commissioning along with Civil & Structural work for following **Plant.**

Sr.No	Particulars	Tender fees in (RS)	EMD in (RS)
01	Standalone Multiple effect Raw Spent wash Evaporation Plant (SMEE) Capacity 600 M ³ / day (13.50 % T.S.) to 135 M ³ / day (60 % T.S.)	15000/-	475000/-

Terms & Conditions

1. Blank Tender forms will be at website <https://eprocurement.synise.com> from the date 06/11/2019 to 30/11/2019.

2. The Online submission of Tender will be submitted on or before 07/12/2019.

3. Technical Pre Bid meeting date and place will be informed later.

4. Tenderer shall pay the Tender fees + 18 % GST. through RTGS/NET

Bank details are as under.

Name of beneficiary – Vilas SSK Ltd.,

Name of Bank - Bank of India.

Branch Code - 0641

IFSC Code - BKID0000641

Account No. - 064120100000571

5. EMD as mentioned above in the form of Demand Draft / Bank Guarantee of Nationalized Bank and drawn in favor of sugar mill , payable at Latur. Tenderer shall upload the scan copy of EMD & original EMD shall be submitted to Karkhana.

6. Sugar Mill reserves the right to accept or reject the tender without assigning any reason thereof.

7. The Following documents to be upload online.

i. NFCSF Registration Certificate.

ii. No deviation Certificate.

iii. Two Plant Performance & Successful trial certificate.

iv. Statement of Credentials.

v. Income Tax Return certificate for last five years.

vi. Turnover for Last five years.

vii. Process flow diagram.

viii. EMD

Amit Deshmukh, MLA
Founder Chairman

Smt. Vaishali Vilasrao Deshmukh
Chairman

S. V. Barbole
I/C.Managing Director

Govind Borade
Vice Chairman

**VILAS SAHAKARI SAKHAR KARKHANA LTD.,
VAISHALINAGAR, NIVLI, TAL. & DIST. LATUR**

2. SCOPE OF SUPPLY

Scope of work shall be as follows:-

1. Design, manufacture, procure, supply, erection & commissioning up to satisfactory trials as per the parameters given in the process performance parameters /guarantee (Section II –2.4).
2. The plant and machinery, equipments, instruments etc. shall be quoted as per the technical specifications given in Section II –2.1 as per the battery limits given in Section II –2.2.
3. The capacity, efficiency & performance of the said plant should be guaranteed as per parameters given in the process performance parameters / guarantee (Section II –2.4).
4. The work is to be executed as per the terms & conditions stipulated in this invitation and also in the specimen agreement (Section IV)
5. Your scope of supply (turnkey basis) should include the necessary equipments, plant & machinery, electrical, instrumentation, building, structural & civil work, civil foundations, roofing, painting etc. to meet with the requirements complete with the packing & forwarding charges, transit cum storage cum erection insurance, custom duties, GST, sales tax & other government levies, if any, erection, supervision and commissioning charges. This also includes other tools & tackles required for the fabrication at site, adequate manpower quite conversant to the fabrication & erection work of such plant and machinery.
6. All foundation bolts, foundation wedges, foundation packing, liners etc. are also to be included in the scope of supply.
7. After the finalization of the order, the supplier has to get all the foundation and other civil drawings & all the detailed GA drawings of each & every

part of plant & machinery, piping layout drawing, equipment layout & elevation drawings, P&I diagrams approved from the **inspection agency “Vasantdada Sugar Institute (VSI), Pune”** appointed by the Sugar mill and shall be submitted well in advance to purchaser & purchaser's inspection agency (VSI) for prior examination & approval thereof.

8. All the consumables required for erection & commissioning like gas cylinders, all types of welding /brazing or soldering rods, emery papers, grinding paste, hold lights, graphite, Kerosene, Oil, Rustburg, back joints, packing's, etc. are also to be included in the scope of supplier.
9. All types of tools & tackles like hoisting tools, chain blocks, pulleys, wire ropes, hooks, cranes, hydra etc. to be arranged by supplier. All special tools required are also to be arranged at supplier's cost. All staff including Engineers, Technicians, Skilled, Unskilled workers, Khalashi required for loading /unloading, fabrication, erection etc. should be arranged by supplier. The machinery & other equipments arrived at site should be properly stored at site. Supplier shall also adopt the transportation of machinery and equipments from the stored place to their respective position. After completion of the project the precision tool kits are to be handed over to **M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur.**
10. Technical Services shall include: -
 - a. Project In charge: - Supplier will provide a qualified & experienced project Engineer /Manager to supervise the installation & erection of the plant who will be stationed at site.
 - b. Training of the Purchaser's personnel: - Supplier shall arrange to train the purchaser's all personnel for the process operation & maintenance of the plant being set up under the agreement on its own cost.
 - c. Startup services: - Supplier will provide qualified staff for start up of plant and during the performance period.

- d. After sale services: - Routine operation field review & training update. Supplier will furnish a qualified field engineer to review unit operations & provide additional on-site training on demand by the purchaser.
11. Electricity required for site fabrication will be supplied at actual cost at one point. Cables for welding at actual fabrication unit is to be arranged by supplier and energy meter required for the same will have to arrange by supplier.
- Water required for erection & trials will be supplied free of cost and for lifting of water required pumps and its piping in the scope of supplier.
12. Before submission of offer, tenderers or their representative visit the Sugar mill site for inspection of site.
13. The tenderer should also get acquainted with the local conditions at the Sugar mill site & must know the rules & regulations of Central & State Govt. and has to follow law of land.
14. All fabrication of equipments will be done under stage wise third party inspection (VSI). All bought out equipments should be offered for inspection before dispatch. The list of sub contractors shall be approved /certified by the Purchaser.
15. Design, supply, erection and mechanical, water & pre-commissioning trials of the plant & machinery should be completed within **six months** from the date of purchase order. Plant should be commissioned & stabilized within **15 days period**.
16. The supplier will prepare & submit to purchaser the PERT /CPM chart and time schedule accordingly. Supplier should ensure that they would maintain the time schedule as per the chart.
17. The price should be quoted in the specified format. Income Tax applicable will be deducted at source.
18. Supplier should arrange lodging & boarding facilities for their own staff.

19. a) Supplier should submit as built drawings (Four copies each) for all GA drawings of equipments, actual equipment layout, piping layout, cable layout, elevation etc.
 - b) Four sets of G.A./Coordinating drawings and O & M manual along with all circuit diagrams will be provided by the Seller.
 - c) Seller will provide instrumentation details and calibration requirement.
20. First fill of oil & grease for all pumps will be in the scope of supplier.
21. The supplier will obtain the required statutory approvals / consents for the plant; However, Govt. fees will be paid by the purchaser.
- a) Electrical Inspector
 - b) Factory inspector
 - c) Fire & safety as well as Water hydrant system
 - d) Labour license from labour commissioner

3. TERMS AND CONDITIONS

1. General Guidelines:

- i. Tenderers are advised to carefully study these conditions and other tender documents before quoting their rates.
- ii. Before submitting the tender, each page of these conditions /tender documents must be signed by the tenderer, over the firm's seal, in token of their acceptance of the same.
- iii. Tender should be submitted only in the prescribed form and should be submitted only by the purchaser /party in whose name those are issued. Violation of this provision will automatically debar the tenderer from consideration.
- iv. Tenders received after the specified date or postal delay or man reach delay will not be considered.
- v. All entries should be made in ink, any correction should be attested by signature of tenderer over the firm's seal, Over-writing will not be accepted. Incorrect words /figures should be crossed and correct figures rewritten.
Conditional tender will be considered as invalid.
- vi. All rates quoted should be both in words and figures, In case of any difference between the two; the rates quoted in words would be considered as final and authentic.
- vii. The prices quoted by the Tenderer are firm and final & **NO ESCALATION WILL BE ENTERTAINED.**
- viii. Price of the machinery shall be inclusive of the packing & forwarding charges, handling, transportation up to sugar mill site, unloading at sugar mill site, erection, commissioning up to satisfactory trials & supervision thereof, transit cum storage cum erection insurance, etc. Goods & Service

Tax (GST), octroi, custom duties, other State /Central Govt. levies, will be extra against proof of payment only.

- ix. Price shall also be inclusive of foundation bolts, first fill of oil & grease required for the commissioning.
- x. Price shall also include other tools & tackles required for the fabrication at site, adequate manpower quite conversant to the fabrication & erection work of such plant and machinery.
- xi. Any deviation from the specifications, scope of supply and terms and conditions will make the tender liable for rejection.
- xii. Minor changes suggested by the purchaser shall be carried out by the supplier without any additional charges whatsoever and without affecting performance parameters.
- xiii. If tenderer wants to have bifurcation of the order, viz. supply and erection, commissioning etc. they should mention it in the offer very clearly.
- xiv. Supplier shall become Class "C" nominal member of the Sugar mill.
- xv. Contract period: Unless otherwise specified /agreed; the contract is awarded for **six months**.
- xvi. The Purchaser reserves the right to -
 - a. To divide the work among the supplier's at the discretion of the purchaser
 - b. To reject any or all tenders either in full or in part, without assigning any reason whatsoever and
 - c. To engage additional supplier at any time without giving any notice whatsoever to the suppliers already appointed against this tender.

2. Eligibility:

Tenderer should be registered with NFCSF.

- * Tenderer should submit the performance certificates for at least **two plants** of raw spentwash evaporation based on multiple effects, supplied & successfully commissioned by them. (Turnkey supply of total plant and not the equipment supply)

- * **M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur** has reserved its rights to opt for above conditions or anyone of above conditions.

3. How to apply -

- i. Tender is to be submitted in three separate sealed envelopes.
- ii. **Envelope No. 1** should contain Technical Bid (Refer Section-II), General Terms & conditions, Declaration & Specimen agreement (Refer Section-I, III & IV)

Envelope No. 2 should contain Price Bid with Declaration (Refer Section-III) &

Envelope No. 3 for EMD

In respective envelopes duly signed and sealed. The name of the company with complete address, telephone /fax Nos. etc. should be written on it.

The three envelopes should be superscripted in bold letters (Tender for Spentwash Evaporation plant) as "**Technical Bid**" & "**Price Bid**" & "**EMD**" respectively.

Three envelopes should then be put in another outer envelope and then to be submitted before the closing date and time.

- iii. Tenderer or his representative should personally deposit the tender well before the closing time and date at the office of **M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur.**

M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur will not accept any responsibility if the tender is not submitted personally by the tenderer but instead handed over to any employee. If the tender is submitted by post, the same must be mailed by registered post, The cover subscribed in bold letter with tender number, closing date should

be addressed to the **Managing Director, M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur.**

The postal delivery must take place latest on the working day preceding the date of closing of tender.

- iv. Tender received late/in open condition /without EMD / insufficient EMD /not meeting this tender conditions/incomplete in any respect /any variation in technical specifications are liable to be summarily rejected.

4. Earnest money deposit:

Interest free EMD in following mode to be submitted alongwith the offer

- i. Demand draft /Bank Guarantee of any Nationalized Bank in favour of **M/s. Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur.** Payable at Latur

Note: EMD in form of cash / cheque shall not be accepted. No interest shall be payable on EMD.

Please furnish the following information on your letterhead -

- a. Name & address of your banker
- b. Account No.
- c. Branch name and code no. to facilitate timely release of your EMD

4.1 Refund of EMD:

EMD paid against the tender is refundable to the unsuccessful tenderers on finalization of the tender and placement / acceptance of the order by successful tenderer. EMD of successful tenderer will be retained by purchaser and will be returned without any interest after successful performance trial of the plant.

4.2 Forfeiture of EMD: -

EMD is forfeited in the following event.

- i. Withdrawal of offers while the offer is under consideration during the validity period.

- ii. Non -acceptance of order /non-confirmation of acceptance of order when placed on mutually agreed terms.
- iii. Any Unilateral Revision made by the tenderer after placement of the order.

5. Clarifications: -

- i. Clarifications /doubts shall be entrained in the Pre-bid/ Technical sub-committee meeting of Sugar mill.
- ii. Purchaser reserves the right to clarify with any or all tenderer.
- iii. Tenderers may be required to visit Purchaser's office for clarification/ verification of documents entirely at the cost of tenderers.
- iv. Only the proprietor of the firm or the only authorized representative of the firm must personally attend such clarifications, as commitments made and or clarifications given during clarifications will be binding on the tenderers. He /she should carry the necessary authorization to attend such clarifications and hand over a photocopy of the same to the Purchaser.

6. Validity of the Tender:

The quotation /offer shall remain valid up to **four** months from the date of opening. Tenders unless extended by mutual consent in writing. Breach of this provision will entail forfeiture of the earnest money.

7. Finalization of the Tender:

- i. The price finalized by the Purchaser shall be firm & final & no escalation /de-escalation whatsoever will be allowed except on taxes & duties as mentioned in clause 11 below.

- ii. Once the tender is finalized in the name of a tenderer, it will not be transferred to any other firm.

8. Performance Guarantee:

- i. As per the parameters given in Section II –2.4 & as per specimen agreement (Refer Section IV).
- ii. All the plant & machinery & its accessories should be guaranteed for a period of 12 months from the date of commissioning for material, workmanship & performance.
- iii. Plant & machinery and its accessories should be of standard specifications, first class quality and workmanship. The supplier shall replace free of cost any material found defective during the guarantee period. If the supplier fails to do so at the request of Purchaser, the Purchaser shall be free to do so, on the risk and cost of the supplier without his consent.
- iv. Process Performance Guarantee for
 - A) Multiple effect spentwash evaporation plant should be for following parameters: -15 days
 - a. Capacity of plant
 - b. Steam economy of the plant
 - c. Water evaporation rate (M³/day)
 - d. Concentrate output, total solids % in concentrate (kg/day)
 - e. Uniform of stable plant operation (hrs./day)
 - f. Steam required for water evaporation (MT/day)
 - g. Raw material/chemicals consumption (kg/day)
 - h. Make-up water for Cooling tower (Lits./day)
 - i. Power consumption (Kwh/day)
 - j. Treated effluent Quality
 - k. Performance of bought out items

9. Payment Terms:

The purchaser shall pay the contract price in the following manner:

- 9.1 10 % (Ten percent) advance of the contract price for plant and necessary facilities contained in Section III- 3.2 only of this agreement i.e. Rs. -----/- (Rs.-----/-) within 15 (fifteen) days of signing of this agreement, on furnishing of Bank Guarantee by the seller for the said advance in the form annexed to this agreement.

After receipt of advance of 10 %, the seller should submit to the **Purchaser and the Inspection agency** the following within 15 (fifteen) days for approval:

- a. Billing schedule/price break-up and erection schedule
- b. Layout of plant & machinery
- c. Bar chart indicating activities
- d. Dispatch schedule

- 9.2 5 % (Five percent) advance of the contract price for plant and necessary facilities contained in Section III- 3.2 only of this agreement i.e. Rs. -----/- (Rs.-----/-) shall be paid to the seller within 15 days, on furnishing bank guarantee by the seller for the said advance in the form annexed to this agreement

After receipt of advance of 5 %, the seller should submit to the **Purchaser and the Inspection agency** the following within 15 (fifteen) days for approval:

- a. Piping, electrical and instruments particulars and drawings.
- b. List of detailed specifications of bought out items
- c. Utilization certificate of advance.
- d. GA Drawings
- e. Civil & Structural drawings

- 9.3 65 % (Sixty five percent) of the price referred to above for plant machinery i.e. Rs. -----/- (Rs. -----/-) and the reimbursement of actual amount of Goods & Service Tax (GST), octroi,

(custom duty on imported goods, if any) on documentary evidence, after the receipt of material at site and approval of the same. The advance paid under clause 9.1 & 9.2 (i.e. 15%) will be adjusted in this amount. The bank guarantees for advance will be returned to supplier after satisfactorily commissioning of multiple effect spentwash evaporation plant.

In case of items are fabricated at site etc. proportionate amount of the bill value will be paid only after completion of fabrication work at site.

In case of bought out items etc. proportionate amount of the bill of individual item will be paid after receipt of total material and assembling all parts at site like pumps & motors, MCC, PLC, cooling tower, instrumentation, MS/SS plates etc.

Submission of bills and payments:

- i. All the details of GST paid by the supplier shall be shown separately for own manufactured items and for bought out items & to be submitted to the purchaser along with bills by supplier.
- ii. The amount shown in supplier's bill for payment of all such GST will be computed on the basis of all such relevant statutory provisions in force on the date of dispatch and shall the supplier pay the actual amount as.
- iii. The payment shall be released by the purchaser within ten days from the date of submission of approved bills.

9.4 10 % against erection of plant & machinery and after Mechanical & Hydraulic trials certified by the inspection agency.

9.5 10 % after successful commissioning and performance trial of 15 days for multiple effect spentwash evaporation plant against performance security deposit of 10 % valid for 12 months from the date of successful performance trial.

(For more details please refer the draft agreement)

10. Rate Validity:

The quoted rates shall be valid for minimum period of **four** months from the date of opening of the tender and once the offer is accepted and the supply order is placed on the successful party, the rates shall remain valid till the entire delivery is completed.

11. Goods and service tax (GST):

- a) The Govt. taxes (GST, State GST or Interstate GST etc.) and other levies, if any on the works contract shall be borne by the Tenderer.
- b) Tenderer must declare the leviable GST clearly and the purchaser on documentary proof of payment made will pay the same but in no case the contract price will exceed than specified by the purchaser.
- c) Octroi/ entry tax if applicable shall be reimbursed on actual against documentary evidence.

11.1 Turn over tax:

Turn over tax, as applicable, if any, will be borne by the purchaser.

11.2 Goods and services tax (GST):

- i. Tenderer must declare the GST clearly and the purchaser on documentary proof of payment made will pay the same. If there is any difference in the GST quoted and the actual, the differential amount will be recovered from the payable amount.
- ii. The supplier shall furnish to the **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur** with their bills, GST, gate pass in the support of GST, if any. If excise invoice is not submitted the relative GST amount will be liable for deduction from bill as per the Excise rules

11.3 Income Tax:

Income Tax, if applicable, will be deducted at source, while releasing the payment against R.A-Bill / Total Bill.

12. Changes in GST Structure:

Any increase or decrease or any changes in GST will be made applicable to both the- purchaser & supplier subject to the authenticated proof. The increase in the amount of taxes and duties will be on Supplier's account if the material is not supplied as per delivery / dispatch schedule / PERT chart.

13. Packing, forwarding, Transportation & Insurance.

The prices quoted should be inclusive of packing, forwarding, handling, transportation up to Sugar mill site, unloading at site, transit cum storage cum erection insurance etc.

14. Submission of bills and payments:

- i. All the details of GST paid by the supplier shall be shown separately for own manufactured items and for bought out items & to be submitted to the purchaser along with bills by supplier for the reimbursement of the same.
- ii. The amount shown in supplier's bill for payment of all such GST will be computed on the basis of all such relevant statutory provisions in force on the date of dispatch and shall the supplier pay the actual amount as.
- iii. The payment shall be released by the purchaser within fifteen days from the date of submission of approved bills.

15. Delivery period:

Tenderer has to adhere to the period stipulated for delivery completion of work in all respect very strictly.

Design, supply, erection and mechanical & water commissioning of the plant & machinery should be completed within **six months** from the date of purchase order. Plant should be commissioned & stabilized within 15 days period after **six months** erection period.

Liquidated damages for late delivery shall be @ 2 % of contract price per fortnight up to a maximum 10 % the total contract price.

16. Supplier's Responsibilities

16.1 Approvals & Consents:

The supplier shall provide necessary assistance and obtain the necessary approval consents from State Excise, Central Excise, Weights and Measures, Factory & Electrical Inspector, Other authorities as per the statutory requirement in respect of plant to be supplied /erected by the supplier. The supplier will obtain the required approvals / consents at their cost.

a. Electrical Approvals

- i. All flameproof equipments shall be certified by CMRS, Dhanbad. CMRS certificate no. should appear on the nameplate of the equipment.
- ii. CPRI test certificate for the design & construction of MCC panel should be furnished by the supplier.
- iii. Type test certificate of CPRI, Bhopal for short-circuit with standing capacity & supplier will furnish degree of protection.
- iv. The panels shall have Tariff Advisory Committee's Approval.
- v. Other necessary approvals / certificates.

16.2 Drawings, Codes & Standards & Testing

16.2.1 Drawings and information required from SUPPLIER during contract stage

- i. The drawings of machinery and equipments are to be offered for approval of purchaser's inspecting agency VSI.
- ii. Detailed GA drawing of each & every part of plant & machinery, piping layout drawing, isometric drawings, equipment layout drawing, elevation drawing should be submitted well in advance to purchaser for prior examination & approval.
- iii. Foundation & civil drawings should be given by supplier well in advance for prior examination, approval & execution.

- iv. The rights to all design, drawing, specification, tools etc. used for the said unit remains exclusively, purchaser's property.

Process and Mechanical:

- Detailed time schedule in the form of network or bar chart for the design, manufacture, delivery period with critical milestone activities and other important intermediate dates for uninterrupted progress of the project.
- List of approved vendors is provided with this tender who should be followed.
- List of manufacturers and specifications of all standard equipment.
- Piping and instrument diagrams for all media showing all related equipment.
- Complete plant performance data including predicted performance at various loads, heat transfer areas, pressure drops, temperature profiles, part load efficiency etc.
- Start-up and shut-down operations for the plant.
- Valve schedule
- Overall plant elevation and plot plan.
- Loading data for the plant/ tankages and auxiliaries and above ground mounted equipment and supports.
- Evaporation sectional elevation.
- Evaporation plant and tanks layout and details.
- IBR /Factory Inspectorate approved drawings and documents.
- Chemical dosing system arrangement and piping layout drawings.
- Overall dimensional drawing of all evaporation calendria, V.L. separators and other equipments.

- Manuals indicating pump cross section view showing parts, materials and fittings and the characteristic curves.
- Fans & pumps performance test reports.
- Completed data sheets for pumps/motors/fans.
- Details of safety valve including manufacturer's catalogues and service instructions and capacity calculations.
- Piping layout drawing.
- Purchase specifications for all bought-out items.
- Quality plans
- Material test certificate & inspection reports.
- Plant process operation and maintenance manual including catalogues, bought out items; start up procedures and O & M manuals for bought out items.

Control and Instrumentation

- Technical specifications of PLC field instruments, sensors and controls indicating operating parameters as per P & I diagram and recommended ranges of the parameters as per the process requirements.
- List of alarm annunciation points with set values (Manuals).
- Layout drawings for local control panel /boxes.
- Hook-up drawings
- Cable schedule

TENDER SPECIFICATION OF ELECTRICALS

1. INTELLIGENT MOTOR CONTROL CENTER:

Medium voltage switch board shall be dust, damp & vermin proof construction sheet steel clad totally enclosed, floor mounted, self standing type with single front and front door opening compartmentalized cubicle

design with single TPN bus bar arrangement on top with front access with cable entry and outgoing from bottom of the MCC panel.

- a. Local /remote facility to be given.
- b. Capacitor Reactor banks for power factor improvements suitable as per load on MCC panel.
- c. Separator feeders for operating and standby motor loads with suitable handle for operating to each MCCB.
- d. Ammeter to be provided for each feeder.
- e. Fuse less system in MCCB and MCC.

The switchboards shall be suitable for the following operating system.

Rated voltage	:	415V, 3Ph, 4 Wire
Rated Frequency	:	50 Hz
Fault Level	:	50 kA for 1 Sec.
Enclosure	:	IP52

The panel shall be designed for an ambient temperature of 50⁰C. The design, manufacture and testing of the various equipment covered by these specifications shall comply with the latest standards.

MCC'S will be made from CRCA (Cold Rolled Cold Annealed) sheet metal fabrication. MCC will be compartmentalized, non-flame proof type with MCCB system and located at non-flameproof area.

Fuse less system in MCC

MCC will be fabricated from 14/16-gauge MS CRCA sheet, floor mounted, suitable for indoor installation, vermin/dust proof, weatherproof with IP52 degree of protection. Cable entry shall be from the bottom as a standard feature. Electronic energy meter, Voltmeter, Ammeter tray, PF meter to be provided for all MCC's.

SMPS power supply (if required) with 24 V DC for controller of each feeder /starter to be considered.

Each starter of MCC will consist of:

- MCCB
- Control unit with Contactor, Relay for all protections trips and alarms.
Motor Protection like
 - Thermal Overload
 - Over/Under current
 - Long Start / Jam
 - Ground current
 - Motor temperature sensor
- ON/Trip indication
- Emergency stop stay – put push button interlocking system with PLC.

Network Communication facility

- Modbus or
- CAN Open or
- Profibus DP or
- Device Net or

Ethernet

The ability of fault diagnostic and fault history along with other facilities shall be given for this intelligent MCC.

Motor rating above 15 KW, Star Delta starter will be provided. MCCB (Molded Case Circuit breaker) for rating upto and including 6300 Amp.

- ACB (Air Circuit breaker) for rating above 630 Amp.

2. POWER AND CONTROL CABLES:

Individual motors will be connected to MCC by 1.1 KV grade, PVC sheathed armored cables. Cable sizes for respective motor rating will be as follows. All incoming cables of suitable size from PCC to all MCC's shall be in scope of supply.

Motor up 1.5 KW	1 No. x 3 core x 2.5 mm ²	Aluminum
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Motor above 1.5 KW & upto 5.5 KW	1 No. x 3 core x 4.0 mm ²	Aluminum
Motor above 5.5 KW & upto 11 KW	1 No. x 3 core x 6.0 mm ²	Aluminum
Motor 15 KW	1 No. x 3 core x 10.0 mm ²	Aluminum
Motor 18.5 KW	1 No. x 3 core x 10.0 mm ²	Aluminum
Motor above 18.5 KW & upto 26 KW	2 Nos. x 3 core x 10.0 mm ²	Aluminum
Motor 30 KW	2 Nos. x 3 core x 16.0 mm ²	Aluminum
Motor above 30 KW & upto 45 KW	2 No. x 3 core x 25.0 mm ²	Aluminum
Motor 52 KW	2 No. x 3 core x 35.0 mm ²	Aluminum
Motor above 52 KW & upto 75 KW	2 No. x 3 core x 50.0 mm ²	Aluminum
Motor 90 KW	2 No. x 3 core x 70.0 mm ²	Aluminum
Motor 110 KW	2 No. x 3 core x 95.0 mm ²	Aluminum
Motors above 110 KW	With suitable size.	Aluminium
VFD Motors	With suitable size.	Aluminium
Control cable for push button station	1 No. x 3 core x 1.5 mm ²	Copper

3. INTERNAL POWER WIRING

All the power wiring will be carried out by using copper cable. Cable sizes will be as follows.

	Motor rating		Cable size
For DOL Starter	Upto 5.5 KW		2.5 mm ²
	Upto 7.5 KW		4.0 mm ²
	Upto 9.3 KW		4.0 mm ²
	Upto 11.0 KW		6.0 mm ²
	Upto 15.0 KW		10.0 mm ²
	Upto 18.5 KW		10.0 mm ²
	Motor rating	Cable size (Supply side)	Cable size (Motor side)
For Star-Delta Starter	Upto 18.5 KW	10.0 mm ²	4.0 mm ²
	Upto 22 KW	16.0 mm ²	6.0 mm ²
	Upto 30 KW	25.0 mm ²	10.0 mm ²
	Upto 45KW	50.0 mm ²	25.0 mm ²

4. CABLE TRAYS:

Galvanized Iron cable trays will be provided for indoor & outdoor application.

5. EARTHING:

Earthing would be done using G.I. pipe rods as per IS standards. G.I. conductor earthing will be done for all electrical equipment and noncurrent carrying metallic structures/tanks. G.I. conductors will be used for lighting protection, connected directly to separate earth pit.

6. PUSH BUTTON STATION:

Push button station will be provided near the motor wherever required. Flameproof push button station (as per IS 2148) will be provided for flameproof section and non-flameproof push button station (as per IS 2147) will be provided for non-flameproof section.

7. PLANT LIGHTING and LIGHTENING PROTECTION:

1. The normal process area lighting will generally comprise of Fluorescent fittings & Mercury vapour fittings.
2. Flameproof light fittings conforming to IS 2148 shall be provided for hazardous areas.
3. Plant lighting with flame proof fitting will be provided in flame proof areas particularly in distillation & storage section while nonflame proof fittings in non flame proof areas.
4. The normal lighting design will be based on average illumination levels recommended as per IS & calculated to take into consideration the aged output of Lamps. All operating platforms for all floors of plant area shall be properly illuminated.

PLANT AREAS	ILLUMINATION LUX	POSITION OF MEASUREMENT
General Area	160	800 mm above floor
Non Operating	50	800 mm above floor
Stairways & Exits	50	AT Treads
Local Machinery Panels	200	ON Panel

8. Documents /Drawings to be submitted for Approval during Contract Stage:

The following drawings/documents (4 copies) shall be submitted by the Supplier for Purchaser / Inspection Agency approval:

1. Single line diagram
2. Vendor drawings, control schemes and other details for MCCS.
3. Physical layout of electrical system showing all panels, motors etc.
4. Cable tray and trench layout.
5. Cable schedule & interconnection charts.
6. Earthing schedule and layouts.
7. Lightening protection drawings.
8. Data sheets BKW calculation and characteristic curves for all motors.
9. Test certificates for panels, critical components and electric motors.
10. Operation and maintenance manuals for all electrical equipments.

9. Scope of work in services

a. Design and Engineering:

- Preparation of cable layouts, Earthing Layouts and Lighting Layout drawings
- Preparation of panel layouts for L.T. Panel room and control room
- Preparation of cable schedule, interconnection schedule and detail BOQ of panels.
- Preparation of inspection plan and schedule.
- Preparation of schedule for site testing and commissioning.

a. Statutory approvals :

- Obtaining approvals on drawing and designs from local Electrical Inspector and Chief Electrical Inspector authorities.

b. Inspections / Review Meetings :

- Making the arrangements for periodical and final inspection of all major equipments in the system at manufacturers works
- Attending the periodical review meetings at site or the agreed locations.

10. Battery Limits:

From: PCC Panel

To: Incoming ACB / MCCB cubicle of MCC and onwards.

- Earthing : Total earthing system required for plant shall be included in this package along with required excavation , back filling and preparation of earthing chambers for electrodes
- Illumination system : Entire Illumination system required for plant shall be included in this package including lighting of area at all elevations.

11. Performance Guarantee

- All equipment shall be guaranteed for workmanship and materials and for satisfactory performance in accordance with the relevant clauses of the General Conditions of Contract.

The guarantee for performance shall cover individual items and systems for their ratings/outputs, as required in the specification.

12. MAKE OF COMPONENTS:

Sr. No.	Item	Make
1	LT Cables	Polycab/ /Finolex
2	Switchgear	L & T
3	Push Buttons	L & T /Siemens/Teknic
4	Indicating Lamps	Teknic/ L & T
5	Selector Switches	Kaycee/Salzar
6	LT Capacitors-reactor (HF)	Schneider /L. &T./Ambik
7	L.T. Panels	CPRI Approved type tested panel builder
8	Bus trunking	CPRI Approved type tested panel builder
9	Lighting fixtures	Bajaj/Crompton/Wipro/Oreva
10	Motor	Siemens only
11	Capacitor/ Reactor	Ambik
12	VFD	ABB only
13	Piping	TATA/Jindal
14	Lighting	LED

MOTOR:

All electrical motors (for equipment in the scope of supply) shall be

supplied. These shall be suitable for operation at 415 V +/- 10%, 3 phase, 50 Hz +/- 5%, combine variation +/- 10% power supply.

Motors shall have insulation of class 'F' but temperature rise shall be limited to class 'B'

All the motors shall be of **energy efficient IE3 type**.

The motor shall meet the following requirements.

- a) Highest among the commercially available makes & range.
- b) Flat efficiency curve between 60% to 100% load.
- c) Efficiency shall be guaranteed without any negative tolerance and tested.
- d) **SUPPLIER** shall obtain specific confirmation /approval from the Purchaser / Consultant before procuring the motor, for the guaranteed efficiency figures.

All motors of rating above 5.5 KW shall be provided with space heaters. For motor rating 15 KW and above shall be suitable for star delta method of starting.

Terminal box to be rotatable by 4 x 90 Deg. Higher rated motors shall be provided with extension terminal box to receive the aluminum cables to avoid cramping of the cable in the terminal box. The terminal boxes shall be capable of withstanding the maximum system fault current (50 KA) for a duration of at least 0.25 second.

The motor shall be capable of withstanding 150% of the rated voltage.

Motors shall be capable to start and run-up at a minimum of 80% of rated voltage at its terminals with the driven mechanism / equipment connected.

Motors shall be capable of operating satisfactorily at full load for 5 minutes without injurious heating with 75% of the rated voltage at its

terminals.

Break away torque, pull-up torque and pull-out torque shall be properly coordinated with the speed torque characteristics of the driven equipment and the **SUPPLIER** shall submit the characteristic curves interposing motor & driven equipment curves.

Motor shall be capable of withstanding locked rotor current for at least 5 seconds longer than the starting time under rated load conditions.

Starting current shall be less than or equal to 600% of the rated current and the motors shall be designed for direct on line / reduced voltage starting.

Continuous duty motors shall be capable of three equally spread starts per hour under normal condition or two starts in quick succession from cold or one hot start, under rated load conditions.

The selection of drive motor rating for all pumps shall be done considering maximum of the following requirement:

- i. 15% margin over the B KW at the rated duty parameters.
- ii. All motors above 55 KW shall have RTD,BTD
- iii. Invertors duty motors ,wherever required shall have insulated bearings at its NDE end and VPI treatment windings

17. Instrumentation & Controls

The scope of instrumentation work shall include the following:-

Design, system engineering, manufacture and supply of all hardware and software necessary to meet the specified functional requirements, as required for the standalone evaporation plant.

Implementation of measurement, monitoring, alarm, recording and control of the following as a minimum through PLC and SCADA for standalone evaporation plant:-

- a. Temperature control

Pressure control

Flow control

Level control

Plant protection & safety interlocks

Plant startup /shutdown sequence

Other required controls as per overall system design:-

- b. Local gauges, switches, sensors, field instruments for sensing, transmission and all the associated accessories such as Isolation valves, Impulse piping, tubing, fittings and accessories for the connection of instruments and control equipments to the process etc., that are required for the safe and continuous operation of the systems. All transmitters shall be SMART type.
- c. Interposing relays and other types of converters that are required to convert one type of voltage level to another for actuating the final control elements.
- d. Interconnecting cables between the field instruments and the control panel, branch cables between the field instruments and junction box, inter panel wirings, internal wiring of the panels.
- e. Various final control elements like control valves, solenoid valves, pneumatic actuators, power cylinders etc., along with all necessary filter regulators, piping/tubing etc.
- f. Hardware required for erection by the Erection Contractor such as junction boxes, clamps, air headers, cable trays, cable glands, supporting structural and the other necessary materials that are required to carry out the erection work as per engineering practices.
- g. In addition to local mounted instruments, local Boards free standing and fully wired and complete with essential instruments as per the Supplier's practice for guidance of operator.

List of Documents/Drawings to be furnished

The following are the documents/drawings (4 Copies) to be given by the Supplier during contract stage.

- a) Specifications and drawings including Supplier's recommended layout of instruments in field and control room.
- b) PLC architecture
- c) PLC configuration diagram
- d) I/O list
- e) Control Panel drawings
- f) Spare parts list (Commissioning & Maintenance)
- g) List of tools and tackles
- h) List of calibration and diagnostic equipments
- i) List of consumables
- j) Power consumption estimate
- k) Instrument air consumption estimate
- l) Environmental conditions for instrument operation
- m) Consolidated bill of material including field instruments and Erection hardware
- n) Technical catalogue/literature of the model of the PLC system components and accessories offered.

Note: These documents shall be provided as hard copy.

17.1 Insulation for various equipments

This specification covers the technical requirements and essential particulars for the supply of the complete thermal insulation and its protective covering for pipes, valves, fittings including bend, equipment, tanks and vessels, all distillation columns etc. with working temperatures above 50⁰C up to 500⁰C. Unless otherwise specified the scope of supply of the "Supplier" shall include, but not be limited to the following items:-

- a. Insulating materials for all types as specified/required.
- b. Angles, irons, clamps, lugs, etc. for supporting insulation on pipes, ducts, valves & fittings and equipments.

- c. Wire mesh, lacing/binding wires, bands, straps, screws, etc. as required.
- d. Weather hoods.
- e. Any other material as may be required for making the insulation work complete.

Codes and Standards

The supply of thermal insulation to piping systems and equipment covered under this specification shall comply with all currently applicable regulations and safety codes in the locality where the thermal insulation will be applied. The insulating material shall also conform to the latest editions of the codes and standards listed below.

Nothing in this specification shall be construed to relieve the SUPPLEIR of this responsibility.

- IS: 3346: Method of determination of thermal conductivity of thermal insulation material.
- IS: 10556: Code of practice for storage and handling of insulating materials.
- IS: 14164: Industrial application and finishing of thermal insulating materials at temperatures above 80°C and up to 200°C.
- IS: 737: "Specification for wrought aluminum and aluminum alloys sheet and strip (For General Engineering Purpose).

American Society for Testing and Materials

- IS: 8183: "Specification for Bonded Mineral Wool"
- IS: 3150: "Hexagonal wire netting for general purpose"

IS: 3144: "Methods of test for Mineral Wool Thermal Insulation Material"

17.2 Testing and Inspection

1. Test and Inspection of pressure & Non-Pressure Parts
Inspection of raw material
Dimensional checking
Inspection of welds and completes assembly
Visual inspection on completion of finishing.
Inspection after painting.
2. Tests and Inspection on bought-out equipments
Stage Inspection of all the critical components
Dynamic balancing for rotating equipments
Performance tests of all the equipments.
Dimensional checking and visual inspections of final equipments on completion.
3. Tests on Instruments
Inspection of materials
Dimensional checking and stage inspection of all critical components
Checking of panels, checking of relays, simulation, etc.
4. Quality Plan
The SUPPLIER shall submit a Quality plan detailing the list of tests and inspection envisaged for all the mechanical, electrical equipment and instruments during contract stage also indicating stages of inspection, Consultant /Purchaser hold points, etc. for approval.
During contract stage, detailed quality plan along with stages of inspection, customer hold points, etc. will be finalized and followed.

17.3 Manpower:

- i. Staff including Engineers, Technicians, skilled, highly skilled and labour, khalasi required for erection and commissioning of the machinery are to be deputed by the supplier.
- ii. The transportation of machinery and equipments from the stored place to their respective position is also to be done by the supplier's staff.

17.4 Tools & Tackles:

- i. Gas cutting equipments, electric welding set, adequate supply of Gas Cylinders and other consumable are to be managed by the supplier at his cost.
- ii. All tools and tackles required for erection are to be brought by the supplier. If purchaser's tools and tackles are used, extra rent will be charged.
- iii. All the instruments required for the performance measurement during trials will be brought by supplier.

17.5 Breakages / Thefts:

Purchaser will not be responsible for any breakages; the purchaser will entertain theft of the supplier or Sub-Contractors material kept at the site and no claim in this respect.

17.6 Causality, Loss/Damages:

- i. Any damage caused by the supplier's person/team to purchaser's property/person will be assessed and recovered from the supplier. In other words, the entire responsibility in connection with any acts or deeds of supplier's person / team detrimental to purchaser during the course of work will be on supplier's account.

- ii. The responsibility in respect of injury caused to supplier's or sub contractors person / team or anything happened wrong during the course of work will be the supplier's responsibility.
- iii. During the period of execution of the work / job the supplier shall be fully responsible for any causality, loss or damage. The purchaser will not be responsible for any type of payment like compensation etc. to the supplier's workers.

17.7 Equipment Fabrication:

All fabrication of equipments will be done under stage wise third party inspection by purchaser. All bought out equipments should be offered for inspection before dispatch – 15 days.

18. Changes:

- i. Purchaser without invalidating this agreement may order minor extra work or make changes by adjusting work, the contract price being remained same. All such work shall be executed under terms & conditions of this agreement.
- ii. Except in an emergency endangering life or property, no change shall be made unless authorized in writing by the purchaser.

19. Purchaser's Right -

19.1 Risk purchase:

If the successful tenderer fails to execute the work as per order / schedule and after request of the purchaser contractor fails to do so then the purchaser shall be free to execute the work/purchase the required material on the risk and cost of the supplier without his consent.

19.2 Cancellation:

Purchaser reserve the right to cancel the contract forthwith upon or anytime after the happening of any of the following events:-

- i. If supplier commit a breach of any of the terms and conditions of the tender and fail to remedy such breach within ten days of the receipt of the written notice from purchaser in regard thereto.
- ii. If supplier do not adhere to the instructions which may be issued from time to time after mutual discussions in connection with the manufacture / supply of the material.
- iii. Purchaser's right to so terminate the contract shall be without prejudice to any of purchaser's rights and remedies against supplier and in the event of our so terminating the contract, purchaser shall not be obliged to pay for any loss or compensation in respect of such termination the security deposited will be forfeited.

20. Arbitration:

If at any time there should be any question, dispute or difference between the parties in respect of any matter arising out of or in relation to this Agreement, either party may give to the other party notice in writing of the existence of such question dispute or difference and the same shall be referred to the Arbitration of a single Arbitrator when the parties may agree upon, otherwise to two Arbitrators, one to be nominated by each party. The Arbitrators shall before proceeding with the reference, nominate an Umpire to act in case of disagreement as Single Arbitrator. The award of the Arbitrators shall be final and binding on the parties and be accepted by them. This reference to the Arbitrators shall be deemed to be a reference under the provision on the Indian Arbitration and Conciliation Act, 1996 and the rules made there under and any statutory modifications and re-enactments thereof that may be made from time to time and actually in force at the time of the reference. The place of arbitration shall be **Latur (Maharashtra)**. The cost of Arbitration shall be borne by the parties as may be decided upon by the Arbitrators or the Umpire as the case may be. No party shall take recourse to judicial courts including higher courts before exercising this clause.

21. Duplication of clause:

Whenever there is duplication of clause either in the terms and conditions or in the agreement, the clause, which is beneficial to the purchaser, will be considered applicable at the time of any dispute.

22. Execution of agreement: -

- i. Successful tenderer will be required, before undertaking the contract, to execute the agreement with purchaser on court stamp paper.
- ii. Specimen set of agreement (Refer Section IV) is enclosed along with the tender document. Tenderers are advised to carefully read the same and submit with tender duly signed on all pages over the official seal, in token of acceptance of the terms and conditions thereof.
- iii. The person signing the tender should produce necessary notarized power of attorney in original authorizing the signatory to act on behalf of the proprietor /firms before signing the agreement. The original power of attorney will remain with the purchaser.
- iv. Failure to execute the agreement within ten days time may render the tenderer liable for forfeiture of earnest money deposit and termination of contract without prejudice to the rights of the purchaser to recover the damages under law.
- v. All terms and conditions stipulated in the tender notice, tender document, agreement and other documents furnished with the tender and related correspondence shall form part of the contract.

We have read and understood the above terms and conditions of this tender and hereby agree to abide by them and the same are acceptable to us.

Date: ---- /---- / 2019

Place:

**Signature of the representative of the
Plant & Machinery Suppliers (Tenderer)
with Company rubber stamp**

4. STATEMENT OF CREDENTIAL

General Information

1. Name of the firm
2. Nature of the firm (State whether Limited Company/ Partnership Company /Co-operative Society / Proprietary)
3. Year of establishment
4. Company Registration No.
5. Registered address
6. Correspondence address of Head office with telephone, mail & fax nos.
7. Address of Branches, if any
8. Address of the workshop
9. Name & address of Director, in case of Limited Company, Name & address of partners, in case of partnership firm alongwith Deed and MOU.
Name & address of proprietor, in case of proprietary firm
10. Permanent Account Number (PAN)
11. Registration No. of ESI and PF
12. Excise Registration No.
13. MST & CST certificate
14. Work Contract Registration
15. Latest Income Tax Clearance certificate
16. Current solvency certificate

17. Name of Banker with full address
18. Style of account and account no.
19. Whether the firm has any suits/claims pending with tax authorities (Give Details)

Note: Tenderer is required to fill up the above information wherever applicable or submit the documents in support of the above information.

Information related to project -

1. Registration certificates from NFCSF.
2. Organizational chart & division undertaking such projects for execution.
3. List of orders currently in hand with their order value & order copy.
4. List of projects commissioned in last 5 years with reference list of Projects- Year, project value & performance certificate.
5. Details of sales service department & details of technical center or R & D laboratory facility & list of patents acquired, if any.
6. Turn-over for last 5 years (Give year wise)
7. Any other highlights of process/system.

5. DOCUMENTS TO BE SUBMITTED

Following documents / details are required to be submitted by the tenderer:-

The whole Tender Document (in original) including: -

1. Registration certificates from NFCSF.
2. EMD in the form of DD/ Bank Guarantee.
3. Plant performance certificates.
4. PWD registration certificates, Min. class III State Govt. approved with MoU.
5. Income tax returns certificates.
6. Statement of credentials.
7. Turn-over for last 5 years (give year wise)
8. Minutes of prebid meeting.
9. Process flow diagrams.
10. No deviation certificates.
11. Organizational chart & division undertaking such projects for execution
12. Section I - i.e. General document dully filled in wherever applicable, signing each & every page of the document with company stamp.
13. Section II - i.e. Technical Specifications for Multiple effect spentwash evaporation plant in purchaser's specified format only, duly filled in wherever applicable signing each & every page of the document with company stamp.

14. Section III - i.e. Commercial Format with declaration in purchaser's specified format only, duly filled in signing each & every page of the document with company stamp.
15. Section IV - i.e. Specimen agreement duly filled in wherever applicable signing each & every page of the document with company stamp.
16. All the documents mentioned in the statement of credential.
17. Block diagram of water & mass balance.
18. Drawings (Process Flow Diagram) for Multiple effect spentwash evaporation plant.

6. CHECK LIST

Following documents should be submitted in the separate envelopes as given below: -

Envelop No. 1 - (Technical Bid) -

1. Registration certificates from NFCSF.
2. Plant performance certificates.
3. PWD registration certificates, Min. class III State Govt. approved with MoU.
4. Income tax returns certificates.
5. Statement of credentials.
6. Solvency certificates.
7. Turn over for last five years.
8. Minutes of pre-bid meeting.
9. Process flow diagrams.
10. Technical specifications duly signed.
11. The entire general document duly signed.
12. Declaration & agreement duly signed.
13. Water & mass Balance –block diagram.
14. Name, address & other details of your banker.
15. Photocopy of authorization letter.
16. No deviation certificates.

Envelop No. 2 - (Commercial Bid) -

1. Declaration
2. Price offer in the given commercial format

Envelop No. 3 - (Earnest Money Deposit) -

EMD in the form of Demand draft /Bank guarantee

SECTION II – TECHNICAL SPECIFICATIONS

- 2.1. TECHNICAL SPECIFICATIONS FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
- 2.2. BATTERY LIMITS FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
- 2.3. SPECIFICATIONS FOR CIVIL & STRUCTURAL WORK FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
- 2.4. PROCESS PERFORMANCE PARAMETERS/ GUARANTEE FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
- 2.5. DRAWINGS FROM SUPPLIER FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
- 2.6. MAKES OF VARIOUS BOUGHT OUT ITEMS

**2.1 TECHNICAL SPECIFICATIONS FOR MULTIPLE EFFECT RAW
SPENTWASH EVAPORATION PLANT TO HANDLE \cong 600 M³/DAY RAW
SPENTWASH**

(Steam pressure will be made available at 7.0 kg/cm² (g))

(PRDS to be installed by the supplier of required capacity)

Note:- Wherever possible, the existing plant and machinery of BMSW evaporation plant to be used for the new RSW evaporation plant. This depends on the choice of the supplier

Sr. No.	PARTICULARS	SPECIFICATIONS	Remarks
1	Spentwash transfer pump with motors (From holding tank to Feed tank)	Type- Centrifugal with double mechanical seal Capacity-30 M ³ /hr MOC-Shaft, Impeller- SS-316 and Casing-CS Nos. 1+1	Existing to be used. Capacity-35 M ³ /hr Nos. 1+1
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
2	Spentwash feed pump with motors (From Feed	Type- Centrifugal with double mechanical seal Capacity-30 M ³ /hr MOC-Shaft, Impeller- SS-316	Existing to be used. Capacity-30 M ³ /hr Nos. 1+1 (1 No. pump

	tank to Evaporation plant)	and Casing-CS Nos. 1+1	repairing work required)
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
3	Feed tank	Capacity -100 M ³ MOC – S/B/T/Nozzles SS – 304 Thickness-S/B/T-4mm No. – 1 With Cage ladder, railing, walkway and level float with indicator, Manholes-2 Nos. and nozzles	Existing to be used. Capacity -150 M ³ MOC –SS – 304
4	Online Strainers (Filters)	MOC - SS- 316 Nos.- To be specified	New
5	Degasser (if required)	Column type / suitable type MOC-Shell/Tray/Cap/DC/Dish end/Nozzles-SS-316 Dia. (mm)- To be specified Shell Thickness - To be specified Down Comer- 2.5mm Tray Thick. – 2.5 mm Cap Type-Bubble Cap thick- 1.6mm Tray spacing -250mm No.-1	If required, Existing to be used. MOC –SS – 304

6	Degasser pump with motor (If required)	Type- Centrifugal with double mechanical seal Capacity- 30 M ³ /hr MOC-Shaft, Impeller- SS-316 and Casing-CS Nos. 1+1	If required, Existing to be used. Capacity- 35 M ³ /hr, Nos. 1+1 & recirculation pumps 225 M ³ /hr, Nos. 1+1
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
7	Automatic Flow Control Valve	MOC - SS -316 Nos. -To be specified	Existing to be used. (If required, the rectification and calibration work of system components will be carried out by supplier.)
8	Feed Preheaters	Shell and Tube type MOC-Shell- SS 304 Tube/Bonnet/Nozzles/Tube sheet - SS-316 Dia. (mm)- 3.0 Shell Thickness - To be specified Tube Size- 25.4mm OD/1.2mm Thick / Length (M) to be specified. HTA- (M ²)- To be specified Pre-heater Nos.-Min. 3 Nos.	Existing to be used. Total HTA- (M ²)- 168.0 Total- 5 Nos. MOC -SS - 304 Tube size- 38.1mm OD/1.2 mm Thick / 9 M Length
9	Multiple Effect evaporators	Type – Falling film / Falling film plus forced circulation MOC-Shell- SS 304 Tube/Bonnet/Nozzles/Tube	Existing Falling film evaporators- HTA- (M ²)- 1500.0 MOC -SS - 304

		<p>sheet - SS-316 Shell Thickness (mm) – 4.0</p> <p>a) Falling film evaporators- 3 Nos. are in operation + 1 No. is standby Tube size- 50.8 mm OD/1.6 mm Thick / Length (M) to be specified. HTA- (M²)- Each evaporator HTA to be specified Passes- To be specified</p> <p>b) Force circulation evaporators - 2 Nos. are in operation + 2 Nos. are standby Tube size- 38.1 mm OD/1.6 mm Thick / Length (M) to be specified. HTA- (M²)- Each evaporator HTA to be specified Passes- To be specified MOC-Tube-SS-316, Shell-SS-304 Tube Type-ERW</p> <p>Three evaporator's bodies should be standby so that cleaning can be carried out without any stoppage of plant operation.</p>	<p>Total- 5 Nos. Tube size- 50.8 mm OD/1.6 mm Thick / 9 M Length to be used. Supplier has to use existing evaporators (3+1 Nos.) or (4+1Nos.)</p> <p>New</p>
10	Vapour Liquid	Type – Gas Liquid Separator	Existing to be used.

	Separators	<p>Working Nos.- 5.0 MOC - SS-316 Sight and light Glass Shell Thickness (mm) – 4.0 Length (M) to be specified. Cap. (M³)-Each VLS cap. to be specified VLS Min. – 5 Nos. Vapour separator should be complete with following fittings 1 No. SS quick openable man-way/hand hole located on the vertical portion of the shell. 1 No. Sight glass 1 No. Light glass 1 Set connection for dial thermometer, temperature sensors and vacuum gauge. 1 No. SS Concentrate outlet at the bottom, ending in SS union. Level controller sensors for each VLS</p>	<p>MOC –SS – 304 Total- 5 Nos. & Additional new 2 Nos. VLS for force circulation evaporators to be installed (if required) Capacity –To be specified</p>
11	Thermal Vapour Re-compressor (TVR)	<p>MOC - Body - SS -304 Nozzles and Flange- SS -304 No.- 1</p>	<p>Existing to be used. (If required)</p>
12	Evaporator Recycle pumps with motors	<p>Type- Centrifugal with double mechanical seal Capacity-To be specified Head-To be specified MOC-Shaft, Impeller- SS-316 and</p>	<p>Existing 6 nos. Capacity-35 M³/hr pumps to be used for falling film evaporators.</p>

		<p>Casing-CS Nos. - 5 Nos. working +2 Nos. standby</p>	<p>For force circulation evaporators- new pumps with motors (flame proof) to be installed. Type- Centrifugal with double mechanical seal Capacity- To be specified Head- To be specified MOC-Shaft & Impeller- SS-316 and Casing-CS Nos. 2+2 As per the capacity & requirement</p>
		<p>Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 5+2</p>	<p>Existing to be used & new.</p>
13	Surface Condenser	<p>Shell and Tube type MOC- Shell/Tube/Bonnet/Nozzles/Tube sheet - SS-304 Dia. (mm)- To be specified Shell Thickness (mm) – 3.0 Tube Size- 25.4mm OD/1.2mm Thick / Length (M) to be specified.</p>	<p>Existing to be used. MOC –SS – 304 HTA- (M²)- 210.0 Tube size- 38.1 mm OD/1.2 mm Thick / 9 M Length to be used.</p>

		HTA- (M ²)- To be specified No.-1	
14	Conc. Spentwash storage Tank with stirring & heating arrangement.	Capacity - 30 M ³ MOC – S/B/T/Nozzles SS – 304 Thickness-S/B/T-4mm No. – 1 With Cage ladder, railing, walkway and level float with indicator, nozzles & Manholes-2 Nos.	Existing to be used. MOC –SS – 304 Capacity -55 M ³
15	Conc. spentwash transfer pumps with motors	Type- Centrifugal with double mechanical seal Capacity- 10 M ³ /hr MOC-Shaft, Impeller- SS-316 and Casing-CS Nos. 1+1	Existing to be used. Capacity- 25 M ³ /hr Nos. 1+1 If possible or new to be installed
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
16	Vacuum pumps with motors	Type - Water ring type MOC – Casing-CS and impeller SS- 316 Nos. – 1+1	Existing to be used. Capacity- 450 M ³ /hr Nos. 1+1
		Motor:- 3Phase, 415V, 50Hz Nos. 1+1	Existing to be used.
17	Process condensate tank	Capacity- 50 M ³ MOC – S/B/T/Nozzles SS – 304 Thickness-S/B/T-4mm No. – 1 With Cage ladder, railing, walkway and level float with indicator,	Existing to be used. Capacity- 0.5 & 110 M ³ Nos. 1+1 MOC –SS – 304

		Manholes-2 Nos. and nozzles	
18	Process condensate transfer pumps with motors	Type- Centrifugal with mechanical seal Capacity-25 M ³ /hr Head-To be specified MOC-Shaft, Impeller- SS-304 and Casing-CS, Nos. 1+1	Existing to be used. Capacity- 28 M ³ /hr Nos. 1+1
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
19	Steam condensate tank	Capacity – 10 M ³ Type - Vertical / Cylindrical MOC – S/B/T/Nozzles- MS Thickness-S/B/T-6/6/6mm No.– 1	If required New
20	Steam Condensate transfer pumps with motors	Type- Centrifugal with mechanical seal Capacity- 8 M ³ /hr Head-To be specified MOC-Shaft, Impeller- SS-304 and Casing-CS Nos. 1+1	If required New
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	If required New
21	Air Compressor with dryer for instruments	Capacity – To be Specified. Type - To be Specified. Nos. 1+1	Existing to be used. Capacity- 5 NM ³ /hr Nos. 1+1
22	Vapour Duct	MOC-SS-304 Nos.-Lot	Existing to be used & New as per requirement.
23	CIP tank with	Cap-10 M ³	Existing to be used.

	necessary piping's, valves etc.	MOC-SS-304 Thickness S/B/T-3mm No.-1	Capacity- 5 M ³ No. 1
24	CIP pumps with motors	Type- Centrifugal with mechanical seal Capacity- 10 M ³ /hr Head-To be specified MOC-Shaft, Impeller- SS-304 and Casing-CS Nos. 1+1	Existing to be used. Nos. 1+1
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	Existing to be used.
25	Seal Water tank	Capacity – To be specified Type - To be Specified MOC- SS-304 Shell Thickness: To be specified. No.– 1	New
26	Seal Water transfer pumps with motors	Pump Capacity – To be specified. Pump Type- Centrifugal MOC-Shaft, Impeller- SS-304 and Casing-CS Nos.– 1+1	New
		Motor:-3Phase, 415V, 50Hz RPM- To be specified Nos. 1+1	New
27	Sealing water recycle system for pumps	Water supply & return header, tank, pumps and PHEs	New
28	Steam Header (Chest)	1No, MS- IBR approved	If required, New

	With pressure & temp. gauge, safety valve, inlet, outlet steam valve, etc.		
29	Automatic PRDS unit with required accessories	As per required capacity	New as per required capacity
30	Piping & Fittings	Raw & Conc. spentwash piping - MOC-SS-316 Vacuum, CIP & condensate piping -MOC- SS-304 (For SS-304 Piping - Sch.10 up to 50 NB & Sch. 5 for above 50 NB) Steam piping –MOC-MS (IBR), Water piping- MS “C” Class	Existing to be used & New as per requirement
31	HDPE pipe (pressure 6 kg/cm ² g)	As per IS specification 4984-95 HDPE pipes PE – 80	New
32	Control Panel (MCC)	MOC - CS with epoxy painted With MS housing which the colored flow sheet (Mimic diagram) of the plant will be depicted. The panel will have one set push buttons for ON-OFF of all the electric motors in the plant with corresponding indication lamp for operation placed on the flow sheet.	If possible, to be modified or new to be installed.

		The panel will be of damp-proof construction. The instrument panel will be pre-wired to terminal connections.	
33	Instrumentation	<p>(A) The Instrument control panel will be equipped with MS powder coated weather proof/non-flame proof and shall be located in safe area away from any distillation column.</p> <p>1 set Pressure Controller to control steam pressure at the inlet of thermo-compressor.</p> <p>1 No. feed mass flow meter to measure feed rate to evaporator with totalizer.</p> <p>1 No. Final outlet mass flow meter to measure concentrated spent wash quantity with totalizer.</p> <p>1 No. process condensate flow & conductivity meter</p> <p>Digital type Temperature Indicators with duplex type Pt-100 sensors for measuring temperature in all the effects,</p>	<p>Existing to be used</p> <p>New-1 No. mass flow meter to be installed in place of existing magnetic flow meter.</p> <p>New-1 No. mass flow meter to be installed in place of existing magnetic flow meter.</p> <p>Existing to be used. (The rectification and calibration work to be carried out, if required.)</p>

		<p>steam jacket of calendria and cooling water inlet and outlet.</p> <p>(B) Local Mountings-</p> <p>Pressure gauge for indication of the steam pressure before TVR.</p> <p>1 Set dial type vacuum gauges for indication of vacuum in all effects.</p> <p>1 Set dial type temperature gauges for indication of temperatures in all effects.</p> <p>Flow, level, temperature and pressure control loops as per required nos.</p>	
34	<p>PLC based automation system with SCADA, Redundancy for controller & server, power supply, communication module, Latest configuration of Engineering cum operator station, Operator station, Redundant UPS (1 hr</p>	<p>Flow, Level, Pressure, Temperature control loops as per required nos.</p> <p>This is to be placed in AC room & AC to be provided by the supplier to maintain the temperature of AC room in the range 20-25⁰C (Make:- Videocon/LG/Voltas).</p> <p>* UPS backup period should be 1hr.</p> <p>* The PLC software license should have "Lifelong" validity.</p>	<p>Existing PLC system shall be used. However, purchase /labour work/installation/ commissioning required for additional signal / power cabling upto existing cabinet, new analog & digital I/Os, power supply etc. shall be done so as to run the evaporation plant in auto mode. The software & hardware changes</p>

	backup) Laser jet printer. Automatic data storage for minimum 3 months period. Extra 20% IO capacity shall be considered.		will also be carried out.
35	Cooling Tower for Spentwash Evaporation plant with pumps and motors 1+1Nos.		Existing to be used.

Note:-

- The scope of instruments /control loops will be finalized after the submission of P & I diagram & engineering. Suppliers are requested to submit a tentative list of all instruments and list of control loops.
- The mass flow meters are to be purchased from approved vendors of pollution control board.
- Automatic data storage for minimum 3 months period.
- UPS backup period should be 1hr.
- Separate ES and OS original software's license should have "Lifelong" validity.
- Every control valve should have by-pass arrangement.
- RTD should be duplex type.
- All pumps with double mechanical seal and flame proof motors.
- Pumps -1+1Nos. (1No. in operation +1 No. process standby)
- Non return valves (NRV) should be provided for each pump delivery line.
- Safety guards (covers/canopies) for all motors and push buttons.
- Motor capacity design data as per load to be submitted.

- Sealing water system, soft water to all pumps gland-Inlet and out let water header with piping and water collection tank, PHE and pumps to be provided.
- Suitable capacity Chain pulley block with necessary arrangement to fix chain pulley block for opening of evaporator dish-end top/bonnet should be provided.
- Piping passes from every floor flanges should be provided.
- For 250 NB and above piping size every 6M distance flanges should be provided.
- For SS-316 Piping - Sch.10 up to 50NB & Sch. 5 for above 50NB.
- All stub ends should be of long neck type.
- All ball valves should be full port type only.

Electrical:-

Electrical Work for spentwash Evaporation (MEE) Plant	
<p>Complete electrification of plant including design, manufacture, procure, supply, erection, testing & commissioning of compartmentalized MCC, electrical motors, all flame proof equipments, power cables, control cables, instrument cables, lightening arrestor, cable trays, local push button stations for each & every pump, blower, vacuum pump, agitator etc., lighting of all sections of plant including light fittings, earthing pits etc. It also includes cable laying, earthing of motors, MCC, push button stations etc. All necessary modifications, trials, etc.</p> <p>In MCC, 3 Nos. spare compartments suitable for higher HP starters shall be provided. Panel MCC boxes should be as per Indian Electric Rule (thickness) switch, starter, relays, and conductors, ACB, MCCB, ELCB etc. should be of L&T/Siemens/schneider Volt, Ampermeter & energy meter for each panel should be of AE/teknik,newtech make. A copper thimble only is to be used. Earthing should be as per Indian</p>	Specify details

Electrical Rule Standard only. Cable (3.5 core) from main power house to MCC panel is in supplier's scope.	
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Make:-

1. All the cables used for electrification shall be Finolex/Polycab/CCI make only.
2. All lighting material should be of Philips / Crompton Greaves make only.

Insulation & Painting:-

Insulation & painting for MEE section	
<p>Insulation: Insulation for MEE plant & other related equipments & piping like Steam chest, steam piping etc. with Aluminium cladding of 22 G (As per IS code)</p> <p>Painting: Painting as per the relevant code to all MS equipments, CS piping, Supports etc.</p>	To be specify in details

PLC Based Control System:-

Various process parameters like Pressure, Temperature, Level, Flow etc. are sensed by the transmitters.

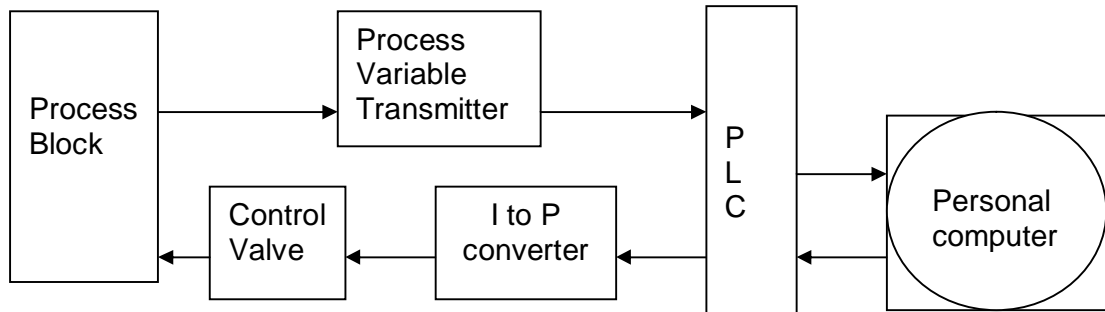
The transmitters will send the proportional signal to the Programmable Logic Controller (PLC).

These signals are wired to the input Channels of the PLC. PLC is interfaced with computer through a special data cable.

PC will access all the data in the PLC and display it in the user-friendly SCADA (Supervisory Control and Data Acquisition) software.

The outputs from the PLC derived from the control loops are wired to the respective control valves.

The following block diagram shows the schematic sketch of the overall system –



The SCADA-PLC instrumentation system for Multiple Effect Spent wash Evaporation plant is to be provided with UPS (Back-up for PLC room should be 1 hr. capacity) & printing arrangement. Automatic data storage for minimum 3 months period. This is to be placed in AC room & AC to be provided by the supplier to maintain the temperature of AC room in the range 20-25^o C.

The PLC software license should have “Life Long” validity.

PLC system-

PLC based control panel with SCADA on PC

Specification of PLC and SCADA system on PC:-

PLC latest version of SCADA Software having run time facility with original license. The controller will be communicating to the local I/O and SCADA station over Profibus /Ethernet network. System will be complete with followings:

1. PID algorithm needs to be in auto/manual bump less transfer.
2. SCADA Run time software is required.
3. Capacity of SCADA software will have required number of Tags.
4. All the process will be operated from SCADA station. SCADA system has following features:
 - a) SCADA of ON-LINE data and Status.
 - b) Powerful sizes and colors, moving and rotating objects, filling, active X control etc.
 - c) Real time and historical trends.

- d) Data logging and reporting and ability to take print-out in custom built log sheet format.
- e) Multiple trends in one display with multipoint pens in one trend. Trends are configurable with facility of hiding selected with facility of hiding selected pens.
- f) Standard password system with various level of security.
- g) Standard alarming system with configurable alarm history page. Various categories of alarm can be configured.

Specification of PC:- (2Nos.)

500GB SATA hard disk drive, i3 Processor, 4GB RAM, DVD ROM/CD read write, 06 numbers USB port, 01 No. serial port, Standard Key Board, Optical Mouse, 32" LED (HD) monitor, UPS (1KVA) with 1 hr battery backup. PC will be DELL/HP make with latest version configuration loaded with Operating software and MS Office. Operating software will be Windows vista Professional with original license. MS office with original license will also require.

Specification of PLC Panel

Digital Inputs	As Required
Digital Outputs	As Required
Analog Inputs-2 wire	As Required
Analog Input	As Required
3-wire RID Input	As Required
Analog Output	As Required

DETAILS OF INSTRUMENT CONTROL PANEL:-

The control panel shall be MS powder coated weather proof/non flame proof and shall be located in a safe areaway from any column.

The control supply to the panel shall be 220 V AC, 50 Hz. The panel will be freestanding type with single loop controllers/indicators /scanners. All panel instruments will have 220 V AC supply.

Size: As per requirement

Make: To be specified

Panel will equip with following:-

1. ON-OFF switch
2. Incomer MCB
3. Isolation Transformer on insulated Base.
4. Fused terminal blocks for digital outputs.
5. Terminal blocks for other I/Os.
6. MCBs for power distribution.
7. PLC including CPU, i/o CARD, Relay board etc for motor ON-OFF.
8. 24 V DC 10 A power supply (01No. for processor and 01 No. for field I/O).
9. Panel illumination and ventilation fan with louvers.
10. Power socket and switch.
11. Cross ferruling.
12. Terminal blocks will be isolated with respect to their potential level color codes wire will be used.
13. System earth and electrical earth will be separately provided in panel.
14. Hooter for alarm in case of fault.

Option for cable entry from top and bottom only.

Software requirement:-

1. Run time software with suitable capacity tags.
2. Original PC operating software with MS office.

Instruments and Controls:-

- Necessary numbers of analog and digital inputs/outputs (I/Os) to run all motors of Multiple Effect Evaporator in a predefined sequence.
- Temperature control loops- as per required nos.
- Pressure control loops- as per required nos.
- Flow control loops- as per required nos.
- Level control loops- as per required nos.

- 3 No. mass flow meter for feed and condensate & Concentrated spent wash measurement flow rate.
- 1No. Conductivity transmitter for measuring conductivity of condensate water.
- 1 No. VFD for feed pump to control the feed flow rate.
- 1 No. Steam flow meter at main steam header.
- 1 No. Mass cum density transmitter.

Field mounted Instruments (Local Gauges)

- 1) 1 set pressure gauge for steam line
- 2) 1 set vacuum gauges for multiple effect evaporator
- 3) 1 set temp. gauges for multiple effect evaporator

2.2 BATTERY LIMITS FOR MULTIPLE EFFECT SPENTWASH

EVAPORATION PLANT

Feed	Raw spent wash for MEE plant is available at spent wash holding tank (5 days). Supplier shall make arrangement (pumps and motors, 1+1Nos. with strainer and pipeline) to carry the spentwash up to the feed tank of MEE plant.
Conc. Spentwash (Product)	To be discharged by the supplier in the spentwash feed tank of incineration boiler with piping and pumps. Supplier also has to specify the quantity and composition of concentrate product generated from evaporation plant.
Evaporation condensate	To be discharged by the supplier in the CPU retention tank.
Steam	Dry saturated steam (7 kg/cm ² (g) pressure) available at inlet of control valve in the spentwash evaporation plant. Supplier has to install PRDS for reduction of steam pressure of required capacity, if required
Steam condensate	Steam condensate will be left by the supplier in the Sugar mill /Incineration boiler condensate collection tank.
Raw water	Raw water is available at the distillery storage tank & will be taken by supplier to the MEE plant.

Soft water	The required quantity of soft water for cooling tower make-up is available at distillery soft water tank. Supplier shall bring soft water up to the cooling tower.
Power	Supplier shall provide required length of cable from sugar mill power house to evaporation plant isolation switch of MCC.
Land	Sugar mill will make available required land for spentwash evaporation plant.
Internal roads, Electrification of site trenches, tree plantation etc.	Sugar mill scope
Chemicals and manpower during commissioning	Sugar mill shall provide all required chemicals and manpower during commissioning of multiple effect spentwash evaporation plant. However, the plant supplier shall furnish quantity and quality of such chemicals at the time of quotation and will bear the cost of excess quantity.
Environmental clearance	The necessary environmental clearance for setting up of multiple effect spentwash evaporation plant shall be obtained by Sugar mill.
Electrical inspector/factory inspector approval	Supplier scope- Govt. fees will be paid by the Sugar mill
Laboratory equipments	Sugar mill scope- Supplier shall supply list of laboratory equipments.

N.B.

1. Sugar mill shall supply information regarding minimum and maximum range and average characteristics of spentwash, Wet & dry bulb temperature, relative humidity, quality of water, soil strata, soil

conditions, water table etc. to the supplier for designing of Multiple effect spentwash evaporation plant.

2. Supplier shall indicate the utility requirement at the time of quoting.
3. Performance trial – 15 days

Process Performance Guarantee for Multiple effect spentwash evaporation plant should be for following parameters:

- a. Water evaporation rate (Lits./day)
- b. Capacity of plant (kg/hr)
- c. Concentrate output, total solid % in concentrate (kg/day)
- d. Steam economy of the plant
- e. Consistent plant operation (hrs./day)
- f. Steam required for water evaporation (MT/day)

- g. Raw material/chemicals consumption (kg/day)
 - a. Make-up water for Cooling tower (Lits. /day)
 - b. Power consumption (Kwh/day)
 - c. Treated effluent Quality
 - d. Performance of bought out items

Supplier shall design the plant taking into consideration the spentwash characteristics and performance parameters.

4. Supply of Technical know-how for operation, operating-cum-maintenance manual (3 Nos.) and training of personnel for smooth operation of multiple effect spentwash evaporation plant shall be done by the supplier.
5. Drawing: The supplier shall supply the following in duplicate at the time of first advance or signing of an agreement whichever is earlier.
 - a) Record drawings for the civil and structural work.
 - b) Assembly and erection drawings for the equipments excluding those of patented parts.
 - c) Wiring diagram for the electrical work.
 - d) P & I Diagram
 - e) GA drawing of each equipment

f) Specification details

2.3 Specification of civil and structural work for proposed Multiple Effect Spentwash Evaporation plant

The following are to be considered-

- The supplier should tie-up with minimum class III GoM approved contractor.
- All design will be as per ISI specification and drawings are to be approved by Factory/electrical inspectorate/safety inspectorate, weights & measurement inspectorate etc. For this Sugar mill will pay statutory fees. However, the approval has to be obtained by the supplier.
- All civil and structural drawings have to be submitted along with technical offer.
- Excavated murum only good quality considered for Plinth filling & if any additional filling is required and then the same is to be provided without any extra additional cost.
- Safe Bearing Capacity of Soil considered as 20T/M² at 1.2M depth. If soil SBC changes, then design will be done accordingly. Suppliers are requested to visit the proposed distillery site and collect necessary information regarding safe bearing capacity of soil before submitting the technical offer.

- Ground Water Table at 5.0 M below GL. If GWT is different, then design will be done accordingly without any additional cost.
- All RCC work should be in M20 grade and reinforcement steel as per suitable design.
- RCC ring wall foundations to be considered for all the tanks and bitumen concrete (min. 5% bitumen content).
- All pump and motor foundations are in RCC
- Cooling tower basin in RCC
- All M.S. Structure considered as per IS 2069 Grade A
- The plinth level of spentwash evaporation plant building will be at min. 0.75 M height from ground level and it is to be built by brick masonry.
- For ground floor flooring of M20 grade (CC1:2:4) as a base concrete is to be made and it's IPS shall be 50mm of M20 grade (CC1:2:4). Plinth foundation should carry the load of 4 M height wall safely.
- Two staircases for evaporation section – One each at either ends up to the top operational floor.
- Staircase – M.S. (Chequered plate with supports /grating of 6mm thick) Staircase of 1M wide, 150 mm risers and 300mm treads with a landing at every 3M maximum and rails will be provided on both sides, thus two staircases to be provided up to top of evaporation plant building. The staircases have to be inside the building.
- The roof of the structures up to the top of evaporators must be covered totally by pre-coated sheets (Pre-painted galvano loom sheet i.e. PPGL sheets) of 0.5mm thickness.
- Pre-coated sheet should cover roofing with extension on both side minimum as 0.75M. Similarly pre-coated louvers of 0.75M size & 0.5 mm thickness must be provided.
- In all sides of evaporation house except ground floor louvers are to be provided.
- Floors of the evaporation building should be with MS grating of 6 mm thickness and each floor height should be minimum 4 M.
- All evaporators accessed from flooring (chequered/grating)

- For evaporation section internal and external gutters (constructed in brick masonry over PCC bedding and with cement concrete coping 1:3:6 with plastering) with proper slope should be provided. External gutter distance (length) should be extended up to the sump 50M away from Evaporation plant and gutters covered with MS grating (6mm thick).
- The flooring area of the evaporation section should be in 1:100 slopes towards the internal gutters.
- PLC room with AC and MCC room-
 1. Internal plaster 15-20 mm thick and outside plaster 20mm thick. Minimum.
 2. Oil Bond Distemper painting considered for inside surface and Snow cream painting considered for outside surface.
 3. Flooring Treatment for MCC Room considered is 100 thick P.C.C. 1:3:6 and above that 50mm thick IPS.
 4. Flooring for control room will be vitrified tiles.
 5. M.S. Rolling shutters for MCC Room.
 6. Laminated plywood door and glass fixing to doors with necessary fittings & fixtures for control room.
 7. Pre-coated window frame and sliding glass windows with glass fixing with sliding facility.
- Building painting – Oil bond distemper inside and cement colour (Showcem) outside.
- All structure work to be painted by one coat primer and two-coat first grade enamel paints – Berger first grade colour.
- Plant building lighting as per norms & to be provided by supplier as per Electrical inspectorate / Sugar mill inspectorate norms.
- The layout should include –
 - i) Evaporation inclusive of staircases (2 Nos.) within building to be covered by pre-coated sheets & with extension on both sides as minimum 0.75M. The evaporation section shall be 27Mx12M. In this house there should be sufficient floors for easy access to all parts/ segments of the

evaporators, preheaters, ducting etc. & should have proper pre-coated sheets roof.

- ii) Distance between flameproof and non-flame proof area should be min. 15M.

The layout will take into account the working space & safety requirement of Sugar mill Inspectorate, Govt. of Maharashtra State.

2.4 PROCESS PERFORMANCE PARAMETERS/ GUARANTEE FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT

A) CHARACTERISTICS OF INPUT OF SPENTWASH – 600 M³/day

Sr. No.	Parameter	Effluent (Spentwash) characteristics
1.	Colour	Dark brown
2.	Temperature (°C)	30-32
3.	pH	3.50 – 4.80
4.	B.O.D. (Mg/lit.)	60,000 - 90,000
5.	C.O.D. (Mg/lit.)	1,20,000 – 1,80,000
6.	Total solid content (%)	12.00 -15.00

B) PERFORMANCE PARAMETERS FOR MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT

Sr. No.	Parameters	Unit	Value
1	Feed rate @ Sp. Gr. 1.054	Kg/hr	26,350
2	Max. total solid content in feed	%	13.50
3	Water evaporation rate	Kg/hr	19,375
4	Concentrate output	Kg/hr	6,975
5	Solid content in concentrate	%	60.00
6	Steam required for water evaporation	Kg/hr	To be specified
7	Cooling water circulation rate	M ³ /hr	To be specified
8	Cooling water inlet temperature	⁰ C	To be specified
9	Cooling water outlet temperature	⁰ C	To be specified
10	Power consumed Evaporator & polishing unit (Excluding cooling water pumps & cooling tower)	Kwh	To be specified
11	Design Basis Feed temperature Steam pressure & temperature	⁰ C Kg/cm ² (g) / ⁰ C	30 ⁰ C 3.50/140 ⁰ C
12	Performance trial	Days, After stabilization of plant	15
13	Steam Economy	Kg of water evaporated per kg steam consumption	To be specified
14	Frequency of CIP	Hrs. after days	To be specified
15	Quantity of CIP effluent	M ³ /day	To be specified

2.5 DRAWINGS FROM SUPPLIER FOR MEE

Drawings to be submitted by the supplier along with offer only:-

- a. Drawings for civil & structural work.
- b. Assembly and erection drawings for equipment excl. those of patented parts.
- c. Wiring Diagram for the electrical work.
- d. P & I diagram
- e. Layout drawing
- f. Instrument particulars and drawings

2.6 Makes of various Bought out items

SS & MS sheet	- SAIL /Tata /Jindal/Essar
SS tubes	- Ratnamani/Divine
GI nut & bolt	- Tata / GWK.
MS channel, beams, angles-	SAIL /Tata /Jindal/Essar
HDPE pipes	- Hasti/ Nocil/Reliance
C.S. Pipes	- Tata / Jindal
PHE	- Alfa-Laval/Gea/Tranter
Screw pump	- Resansi/Roto/PSP/Netzsch
Dosing pump	- Metering/Milton Roy/Alwn pumps

Centrifugal pump	- Microfinish/ /KSB/Kirloskar/Mather Platt/Johnson
Valves (Ball/butterfly/Gate/Globe)	- Audco /Saunder/L&T/Intervalve
Control Valves	- Pneucon/ Pneucon/MIL/Keystone
Air conditioner	- Videocon/ LG/ Voltas/ Blue Star
Decanter	- Alfa Laval/ Humbolt - wedag
Cooling tower with bello	- Paharpur/Matangi
Air blower & Vacuum pump-	PPI /TMVT/IVC
Gear Box	- Radicon/Greaves/Elecon
Filtration, sedimentation & Chlorination unit	- Ion exchange/Thermax
Air compressor	- Chicago/Atlas Copco/Ingersoll Rand/Kirloskar
Air Filter	- Dyna
PRDS	- Forbes Marshall/Precision controls/Arca
Rotameter	- Eureka
Temp. Sensors	- Eureka/Radix/General Instrument/Pyro
Pressure Indicator	- H. Guru/Wika/Waaree
Pressure, Temp. level, flow Transmitter-	Emerson/ABB/Yokogawa
Flow meter (Turbine)	- Toshniwal/Rockwin
PLC	- Allen Bradley/ABB/ Yokogawa
PC with monitor printer	- Dell/HP/IBM
Variable frequency drive	- ABB/ Yokogawa/Siemens
Electrical cable	- Finolex/Polycab/CCI
LT Cable	- Finolex/Polycab
Switchgear	- L & T
Lighting material (Flame proof)	- Phillips / Crompton Greaves/Oreva Type LED
Instrument Cable	- Polycab /Gemscab
PVC wires	- Polycab/Finolex
MCCB/ELCB/RCBO/MCB	- L&T/Siemens/Legrand/BCH
Power Contactors	- L&T/Siemens
Plug and socket dB-	- L&T/ Legrand/Siemens/ BCH
Digital meters (Kwh.VIF)	- Conserv/L&T/Delta Energy (MSEDCL approved)
Indicating Lamp (LED Type)	- Teknic/L & T/Siemens/Atlos
Capacitor/ Reactor	- Ambik

Lighting fixtures	- Oreva
Motor	- Siemens/ Crompton Greaves/ABB
VFD	- ABB
Push Buttons	- L&T/Siemens
Cable Gland	- Comet/Dowell/HMI
Lugs	- Dowell/Jaison
PVC conduit & accessories (HD)	- Diamond/Modi/Precision
Selector Switch	- Kaycee/L&T/Saizer
Cement	- 43 grade Ultratech
Steel	- Fe 500- Tata or Sale/Jindal
Structural Steel	- Fe 500- SAIL/Jindal/Tata/Essar
Vitrified tiles	- Johnsons/Kajaria
Color coated sheets	- Tata/JSW
Aluminum section	- Jindal
Welding rod	- Advani/Modi
Oil paint	- Asian/Berger
UPS	- Emerson

* Supplier will submit & get approval of makes from sugar mill/its inspection agency (VSI, Pune).

Makes of Civil Materials

Sr. No.	Materials	Makes
1	Cement (53 Grade)	A.C. C/ L & T/ Birla Super
2	Reinforced steel (TOR)	Tisco/ Rajuri/ Mahavir
3	Structural steel (MS)	Tisco/ SAIL
4	Pre-coated sheets (PPGL)	Metacolor/ Bhushan/ Uttam
5	Paints	
a)	Cement paint	Snowcem/ Topcem/ Surfacer
b)	Oil bound distemper	Asian/ Berger/ Nerolac

c)	Oil paint (Synthetic Enamel)	Asian/ Berger/ Nerolac
d)	Exterior paint	Apex
6	Tiles	
a)	Vitrified	Jonson/ Marbonite
b)	Ceramic	Kajaria/ Bell

SECTION III – COMMERCIAL FORMAT

3.1 DECLARATION

3.2 PRICE BID

3.1 DECLARATION

(To be submitted on Tenderers letterhead)

Date: -----/-----/ 2019

**To,
The Managing Director,
Vilas Sahakari Sakhar Karkhana Ltd.,
Vaishalinagar, Nivli,
Tal. & Dist. Latur.**

PRICE –

Ref.: - Tender No.

This has reference to your Tender Notice. Accordingly we are submitting our offer. I/We declare that I/We have gone through and carefully examined the scope of supply, terms & conditions, technical specifications and other details enclosed with this agreement. We hereby confirm that the scope of supply & the other technical details of our offer confirm strictly considering technical specifications. We have enclosed all Technical details, Drawings & other information as required in your requisition.

Signature of the representative of the
Plant & Machinery Suppliers (Tenderer)
with Company rubber stamp.

Name & Address of the Tenderer-

Note – If your bid is incomplete with respect to Documents requirement, Technical information, Drawings & specific information, which are called for in specifications, it will be liable for rejection.

3.2 PRICE BID

1) Multiple effect spent wash evaporation plant

DESCRIPTION	PRICE BIFURCATION					
Design, manufacture, procure & supply. Erection & commissioning of Multiple effect spent wash evaporation plant for 600 M ³ /day spentwash (13.50 % Total solids) feed specified as per battery limits including. a) Instrumentation b) Electrical c) Utilities for above d) Civil & structural work	Basic (Ex-Sellers or their Sub-Contractors Workshop or place of supply) price of plant and machinery according to specifications and details given in Section II-2.1 including transport & insurance charges	Price of Necessary Facilities for above	Erection, commissioning and trial run and supervision thereof	Other	Civil & Structural work	Grand Total
(Please quote separately for each item otherwise tender will be considered as incomplete & will be disqualified)						

Please specify the following: -

- 3.2.1 Plant erection & mechanical completion period / Commissioning period / Stabilization period
- 3.2.2 Performance guarantee
- 3.2.3 Excise Modvat: Y/N

Note: - Please quote separately for every job. Taxes/Duties will be extra as applicable.

AUTHORISED SIGNATORY
WITH CO. RUBBER STAMP
DATE -

Please do not write 'If applicable' - Amount to be filled.

SECTION - IV

4.1 SPECIMEN AGREEMENT

4.1 SPECIMEN AGREEMENT

THIS AGREEMENT made at ----- on -----
BETWEEN **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal.**

& Dist. Latur. (a Society registered under the Co-operative Societies Act 1960) (as a Purchaser) which expression shall unless repugnant to the subject or context includes their legal representatives, administrators, successors or assigns represented by Mr./Mrs. ----- Chairman and Mr./Mrs. -----, Managing Director of -----

AND

M/s. ----- a Company registered under the Companies Act 1956 having its registered office at ----- (Hereinafter referred to as the Seller) which expressions shall, unless repugnant to the subject or context including their legal representatives, administrators, successors or assigns – represented by ----- (General Manager) of ----- other part.

1.0 WHEREAS

- 1.1 The Seller has for many years engaged in and have got vast experience in the manufacture, supply, erection, commissioning and supervision of multiple effect spentwash evaporation plants. Inlet Spentwash volume 600 M³/ day (13.50% total solids) and final volume should be 135 M³/ day (60% total solids).
- 1.2 The Seller has acquired and are in possession of secret, know how relating to the designing, engineering, erection, equipping commissioning and operating of Multiple effect spentwash evaporation plant.
- 1.3 The Seller has collaboration with M/s. ----- for the said system, which is permitted by the Government of India and this Collaboration is still in existence or know-how or patent based on proven technology has been taken from.
- 1.4 The purchaser is desirous of acquiring the said multiple effect spentwash evaporation plant. The purchasers have floated tender giving the specifications of the Plant and Machinery and after

receiving the tenders from all the parties, the same have discussed and modified in the technical subcommittee meeting of Sugar mill held on ----/----/2019 to design, procure, manufacture, supply, erection, commissioning and supervising of the machinery and equipments and ensure for the plant, as per the modified tender, the Purchase Committee meeting of Sugar mill held on ----/----/2019 recommended to the purchaser to place order on M/s. ----- i.e. the Sellers hereinabove. The Purchaser and Seller has agreed to the terms and conditions appearing hereinafter and the Seller has agreed to supply, erect and commission the plant and machinery as per the specifications enlisted in the Section II-2.1 to this agreement.

- 1.5 And whereas the contract Price hereafter mentioned is based on the Sellers' undertaking to make ready for the commercial use of multiple effect spentwash evaporation plant (**six months**) from the effective date of this agreement. TIME BEING THE ESSENCE OF THE CONTRACT.
- 1.6 In the event of failure to complete the plant within stipulated period, the seller shall pay penalty to the purchaser under the clause "Penalties" of this agreement as hereinafter provided.
- 1.7 And whereas the contract price hereafter mentioned is based on the supply by tender of the multiple effect spentwash evaporation plant considering overall efficiency of the plant. The details of the performance parameters for these units are provided in Section II-2.4.

If the Seller fails to give guaranteed performance, as hereinafter specified, the seller shall pay the penalty /liquidated damages to the purchaser as hereafter referred.

- 1.8 The Purchaser hereby appoints the Seller for designing, preparing, manufacturing, insuring, supplying, erecting, commissioning and supervising the said plant and such other matters connected therewith referred to herein. The scope of services and supplies to be provided by the Seller is elaborated in

Article 3.0 of this Agreement. The responsibilities of the Purchaser to enable the Sellers to discharge his services as set in Article 7.0 of this agreement. The Sellers shall prepare PERT diagram showing the schedule of work in consultation with the Sugar mill to enable the purchaser to discharge its and /or his inspection agency duty as mentioned in Article 5.5 of this agreement.

- 1.9 The Sellers hereby accept to provide the aforesaid services as stated in Section II of this agreement.

2.0 DEFINITION:

- 2.1 "Site" shall mean the location at **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur.**
- 2.2 "Plant" shall mean the Machinery and equipments as – specified in Section II-2.1 forming part of this agreement and include the commercial plant to be designed, procured, constructed, manufactured, supplied, erected, commissioned and supervised by the Sellers having an initial design, capacity for Multiple effect spentwash evaporation plant with guaranteed performance as specified in Section II-2.4.
- 2.3 "Technical know-how and Information" shall mean and include all technical facts, physical data in which the know-how, drawings and documents which the Seller employed in the ordinary course relating to the construction, erection and operation of the said plant material used therein procedures and techniques used in the plant owned by the seller and repairs and maintenance manual shall be supplied to the Purchaser.
- 2.4 "Contract Price" shall mean the price defined in Article IV-4.
- 2.5 "The Seller" shall mean M/s. ----- who will carry out design, detailed engineering, manufacturing, erection and commissioning of the plant together with the supplies, as stated in Section IV -3.0 of this agreement.

2.6 "The Battery Limits" shall mean the area of plant as specified in Section II-2.2.

3.0 SCOPE OF SUPPLY & SERVICES OF SELLERS FOR MEE

3.1 Multiple effect spentwash evaporation plant -

The Sellers shall design, procure, manufacture, ensure, supply, erection, commission and do the supervision on erection and commissioning of the complete new Multiple effect spentwash evaporation plant detailed in Section II-2.1 and forming part of this agreement in conformity with the specifications including clarifications and elucidations laid down therein and according to the progressive delivery and erection schedules to be drawn up by the Seller and to be approved by the Purchaser and their authorized Inspection Agency **VSI, Pune**, so that the plant shall be ready for commissioning and commercial production within the time provided in Clause 1.5 of the agreement. The capacity, efficiency and performance of the Plant shall be as per Section II-for MEE 2.1, 2.2, 2.3 & 2.4.

3.2 The Sellers scope of work -

3.2.1 The scope of supply of seller should include the necessary equipments, Plant and Machinery to meet the Purchaser's requirements, complete with packing and forwarding charges, transportation to Purchaser's multiple effect spentwash evaporation project site transit-cum-storage insurance charges, customs duty, excise duty, GST and other Government levies and erection, supervision and commissioning charges. This also includes other tools and tackles required for the fabrication at site, adequate skilled and experienced manpower quite conversant to the fabrication and erection work of such Plant and Machinery. All foundation bolts, foundation wedges, foundation packings, liners etc. are also to be included in the supply.

Preparation of drawings including foundation and other civil drawings are to be got approved by Seller well in advance. The

supply of engineering detailed drawings of each and every part of the plant and machinery should be submitted well in advance for prior examination and approval thereof.

All the consumables required for erection and commissioning like gas cylinders, gas cutters, all types of welding /brazing or soldering rods, emery papers, grinding paste, hold-lights, graphite, kerosene, oil, Rustburg, back joints, steam packings, etc. are also to be included in the supply.

All types of tools and tackles like hoisting tools, chain blocks, pulleys, wire ropes, Hook chukes etc. to be arranged at Seller's cost.

All staff including engineering, technicians, skilled /unskilled workers, Khalashis required for loading and unloading, fabrication, erection and commissioning are to be adopted by Seller.

The machinery arrived at site should be properly stored at site. Seller shall also arrange the transportation of machinery and equipments from stored place to their respective positions.

Electricity and water required for site fabrication and construction will be supplied at extra cost; however, water required for trials will be supplied free of cost. Supplier shall arrange the pumps and piping for lifting of water from Sugar mill reservoir.

Copies of the drawings showing the ground plan of the existing Sugar mill and proposed layout of the multiple effect spentwash evaporation plant shall be made available by Seller for guidance / reference.

The tenderers are requested to depute their technical representative to the Sugar mill site to make spot inspection before submission of their offer. The tenderer will also acquaint himself with the local conditions at the Sugar mill site, know the State/Central Governments Laws/Acts and Rules regarding

multiple effect spentwash evaporation plant in connection with the supply, erection and commissioning.

3.2.2 Seller's scope of work shall also include –

3.2.2.1 Painting - General and as per Central & Excise rule, if any.

3.2.2.2 Railing and staircase wherever required as per the Sugar mill Act.

3.2.2.3 Insulation, lagging with aluminium cladding wherever necessary, Earthing, lightening arrester, flameproof connections/lighting arrangement as per the rules in multiple effect spentwash evaporation plant.

3.2.2.4 All design with respect to civil, structural, tank foundations etc. should follow the standard code practice for earth quake resistant viz. as per IS 1893.

3.2.2.5 **Multiple effect spentwash evaporation plant performance-**

All the plant & machinery & its accessories should be guaranteed for a period of 12 months from the date of commissioning for material, workmanship & performance.

Plant & machinery and its accessories should be of first class quality as per standard specifications. Any material found defective during the Guarantee period shall be replaced by the Seller free of cost.

The capacity and efficiency of the plant shall be deemed to be fulfilled if (i) within not less than two months from the start of the plant operations or any fifteen-consecutive full working days, the capacities and efficiencies, as stipulated in Section II-2.1, 2.4 & below given parameters are achieved on every day of the said 15 consecutive days after stabilization.

Performance parameter for multiple effect spentwash evaporation plant –

- a. Capacity of plant
- b. Steam economy of the plant

- c. Water evaporation rate (M³ /day)
- d. Concentrate output, total solid % in concentrate (kg/day)
- e. Uniform of stable plant operation (hrs./day)
- f. Steam required for water evaporation (MT/day)
- g. Raw material/chemicals consumption (kg/day)
- h. Make-up water for Cooling tower (Lits. /day)
- i. Power consumption (Kwh/day)
- j. Treated effluent Quality
- k. Performance of bought out items

The make of the main units to be supplied by the Seller to the Purchaser shall be one out of the makes specified by the Purchaser.

4.0 CONTRACT PRICE

4.1 The Sellers agree to design, procure, manufacture and supply, erect and commissioning and to do the supervision of the plant and machinery of the MEE– 4.1 annexed to and forming part of this agreement at a Total price of Rs. -----/- (Rupees -----/-) hereinafter referred to as the “Contract Price” subject to terms and conditions as hereinafter provided as per the break-up given below: -

Sr. No.	Particulars	Rs. Lac
i)	Basic (Ex-Sellers or their Sub-Contractors workshop or place of supply) price of plant and machinery according to specifications and details given in Section II-2.1 & including transport & insurance charges.	
ii)	Price of Necessary Facilities in respect of 4.1 (i) Above	
iii)	Erection, commissioning and trial run and supervision	

	thereof	
iv)	Other	
v)	Total	
vi)	Civil & Structural work	
vii)	Grand Total	

- 4.2 The total contract price offered at 4.1 (vii) above is exclusive of the total amount in respect of Goods & Service Tax (GST), Special Excise Duties, Customs Duty on imported unit/equipment, local taxes and any other taxes or duties and Octroi at the site only imposed by law leviable on the plant and machinery supplied to the Purchaser. The total price offered is also exclusive of single point GST and octroi on finished bought out items supplied directly to site from Sub-contractors works. The taxes and duties applicable are as follows: -

Name of Tax.	Rate of Tax	Amount of Tax
Total price for plant & machinery will be: Rs. (4.1 + 4.2)		

The increase or decrease in the amount of GST due to changes in the rates/structure in the GST will be on on Purchaser's Account provided the material is supplied as per delivery /dispatch schedule (refer Article 4.3).

4.3 Income Tax

Income Tax, if applicable, will be deducted at source, while releasing the payment against R.A-Bill / Total Bill.

4.4 Changes in Tax structure:-

Any change in the GST structure will be in the scope of seller and change in the tax structure in respect of Part-I shall not be entertained by the purchaser as contract price is fix and firm.

4.5 The price is fixed & firmed till the completion of work and performance trial. No escalation paid on account of any reason.

4.6 Delivery period:-

Tenderer has to adhere to the period stipulated for delivery completion of work in all respect very strictly. Design, supply, erection, construction and mechanical & water commissioning of the plant & machinery should be completed within **six months** from the date of signing the agreement MEE Plant should be commissioned & stabilized within **15 days period** & performance guarantee runs should be jointly conducted for **15 days period** after stabilization of the plant.

Liquidated damages for late delivery shall be @ 2 % of contract price per fortnight up to a maximum 10 % the total contract price.

5.0 RESPONSIBILITIES OF THE SELLER

5.1 The Seller, shall design, procure, manufacture, ensure supply, erect, commission and do the supervision of erection and commissioning of the plant(s) as detailed in Section II-2.1 in conformity with the specifications laid down therein and according to the progress in delivery and erection schedules to be drawn up by the Seller and to be approved by the Purchaser and their inspection agencies so that the plant (s) shall be ready for commissioning and commercial production within the time provided in Article 3 – 3.1 of this agreement.

5.2 While preparing the delivery schedule, the sellers shall ensure that the machinery and equipment shall be delivered in sequence of priority for erection so that the items which should be erected first as per the erection schedule shall be sent first and with the same order of priority the progress of delivery shall be maintained thereafter accordingly. The said monthly delivery schedule shall also indicate the equipment wise breakup prices of the major equipments. The delivery schedule shall be approved by purchaser/his inspection agency (VSI, Pune).

- 5.3 The seller agree to prepare and make available to the Purchaser within two weeks from the effective date of the agreement preferential list of bought out, shop fabricated and site fabricated items of the plant and machinery equipments and accessories including the controlling instruments which would be required for erection, commissioning and operation of the said Plant as more particularly specified in Section II-2.1 to this agreement together with respective specifications and process thereon.
- 5.4 Not more than 15 days from the effective date of this agreement, the seller shall provide to the purchaser four sets drawings of layout plant & machinery foundation, structured work, piping diagram and electrical diagram with detailed project schedule. This will be followed by monthly progress reports on 10th day of each month -progress of activities listed on detailed project schedule and revision in schedule arising out of protracted activities. The project Incharge shall submit the copies of the progress report to the **Managing Director** of the Sugar mill and Inspecting agency- **Vasantdada Sugar Institute, Pune** shall certify the actual progress report. The drawing shall be submitted to the purchaser and /or its inspection agency for approval and the purchaser has every right to scrutinize and modify the drawings.
- 5.5 The seller shall furnish within two weeks of signing of this agreement, a tentative PERT /Composite bar chart composting seller scope of work/activities. This chart shall be finalized with mutual consultation between seller and purchaser and / or its inspection agency.
- 5.6 The seller shall depute their representatives on site to take the delivery of the machinery and equipments who shall be fully responsible for handling unloading, transport and proper storage. The deliveries of material shall be accompanied with clear details packing lists in triplicate mentioning therein gross weight of the packages as well as net weight of the concerned equipment. Store Officer and Engineer of the Seller shall record the details of delivered material in a joint register.

- 5.7 The purchaser shall provide the necessary godown facilities. However, supplier shall be responsible for use of godown at his own security.
- 5.8 The Seller shall agree to become a nominal member "C" Class of the Purchaser before signing of this agreement.
- 5.9 Seller or his subcontractors shall ensure that the design features and quality of workmanship of plant and machinery shall be strictly as per the Section II-2.1 and Standard Engineering practices. The purchaser shall have the right to appoint Sugar mill person/ VSI, Pune to visit place of manufacture assembly or machinery and at purchaser site and to inspect the same. The Seller and their sub-contractors shall offer the plant and machinery for inspection during course of manufacture as well as before dispatch. The seller shall give at least 10 days clear notice by phone /fax /mail followed by confirmation letter to the purchaser and inspection agency for inspection before dispatch of equipment to site. If within 15 days the inspection does not take place, the machinery and equipments will be dispatched in inspection waiver letter shall be issued by the purchaser /inspection agency. Such equipments/materials will be inspected at site provided inspection waiver letter is given by purchaser /inspection agency.

The seller shall prepare the list of equipments, materials to be inspected in consultation with purchaser and inspection agency. The purchaser or their inspection agency shall have the right to reject any material or assemblies or sub-assemblies if these are not of the specified quality and workmanship on the ground that they cannot be rectified.

The purchaser or inspection agency shall within their rights bring to the notice of the seller any deviation observed from the specifications as per Annexure or standard engineering practices and the seller shall be required to rectify such defects and deviations if any out of their own cost, such inspection by the purchaser and/or inspection agency shall not absolve the seller for his responsibility of supply in the plant and machinery in accordance with the annexure and terms and conditions of this agreement.

The Seller shall provide free of cost of necessary facility to the purchaser and/or its inspection agency for proper inspection and testing of the equipments at sellers' or their sub-contractors' work or at proposed plant site.

The assemblies or sub-assemblies /equipments not accepted by the purchaser and/or inspection agency if have been rectified or altered, such parts /equipments assemblies or sub-assemblies shall be segregated for separate inspection and approval before being incorporated in the plant and machinery.

The purchaser and /or their inspection agency shall have the right to give their inspection mark on all items inspected by them. Under no circumstances the seller shall absolve from the responsibilities of inspection unless waived by the purchaser.

- 5.10 The seller hereby agrees to take out excess material goods brought at site with the prior written permission of the purchaser only after successful commissioning of Plant & Machinery. However, the seller shall refund the taxes & duties paid by purchaser on such excess material.
- 5.11 The seller hereby agrees to give necessary instruction to the erection contractors for proper and satisfactory erection. Further, the seller shall also give detailed commissioning instructions to the erection contractors so that the plant is commissioned to purchaser's satisfaction after which the performance trial can be taken up as provided in article 6.0
- 5.12 Seller shall provide first filling of the oils and lubricants wherever necessary.
- 5.13 Seller shall ensure that all pipelines shall be provided with flanges at length not exceeding 6 meters to facilitate easy dismantling wherever cleaning is necessitated. Good quality jointing shall be made on all flanges points to commensurate with pressure temperature and characteristics of the material to be handled.

5.14 INSURANCE

The seller shall be responsible at their own cost for comprehensive risk insurance including transit-cum-storage-cum-erection commissioning insurance of all machinery and equipments and other consumables directly dispatched to the purchasers plants site from the respective places of manufacture. The insurance policies in respect thereof shall be arranged by the seller and kept in full force and effective until commissioning. The seller shall supply replacement of machinery and equipments goods or parts lost or damaged in transit, during storage or during erection and commissioning, free of cost at the site of the purchaser within the time so as to adhere to the date of commissioning mentioned in this agreement. The purchaser will be absolved from any responsibility or liabilities arise on account of accident.

- 5.15 All freight, cost charges, wharf age and demurrage shall be borne by the seller.
- 5.16 During and until commissioning and operation of the plant, the seller shall be fully responsible for any losses or damages to their persons and property resulting from any cause whatsoever connected with the erection and operation of the work and the seller shall provide the insurance at their own cost for the chief erector and their assistants and erection workmen deputed for the erection, for death or bodily injury suffered by the staff members or erection workmen or other staff members personally deputed by them for the purpose of erection and commissioning. In the event if the purchaser is obliged and required to pay any compensation to a workman employed by the seller or by any of their sub-contractors in the execution of the work, the seller shall reimburse to the purchaser the compensation so paid without prejudice to the rights of the purchaser.
- 5.17 To expedite the erection work, seller, may bring on site, certain materials more than actually required for completion of the work as per this agreement. Such materials if found surplus after the completion of the erection, shall be taken by them with prior approval of the purchaser. Any material including the tools and tackles, etc., brought by the seller at

the site and not paid by the purchaser can be taken out by the seller after the purchaser's approval.

5.18 Foreign exchange -

The supplier shall arrange any foreign exchange required for import of raw material or the seller shall arrange equipments. Non-availability of foreign exchange shall not entitle the seller any extension of time for commissioning of the plant.

5.19 Approvals & Consents-

The supplier shall provide necessary assistance and obtain the necessary approval consents, from State Excise, Central Excise, Sugar mill & electrical inspector, other authorities as per the statutory requirement in respect of plant to be supplied /erected by the supplier. The supplier will obtain the required approvals / consents at their cost.

6.0 TRIALS AND TAKEOVER :-

6.1 As soon as the plant is ready for commissioning after completion of the supply of plant and machinery, the seller shall notify in writing to the purchaser specifying the date at least 30 days before the seller intend to carry out the trials to enable the purchaser to arrange for water /fuels, chemicals, operational staff and workmen and other facilities. Unless otherwise agreed to by the purchaser and seller, the sellers shall begin the said trials on the date and time so notified.

PROVIDED THAT the water trials shall be conducted by the seller for a period of a week before commissioning of the plant and machinery after completing delivery and erection to the entire satisfaction of purchaser. After water trial the steam trial have been completed to the entire satisfaction of purchaser. The seller shall issue a certificate to the purchaser that they have supplied the plant as per Section II-2.1 to this agreement, at the Contract price mentioned in clause 4.0 here in above. The said certificate should indicate price breakup as per clause 9.0. The amount will be released as per clause 9.0 of this agreement.

- 6.2 After the said, plant trials have been completed to the entire satisfaction of the purchaser and on their furnishing a certificate to the effect that all the plant and machinery mentioned in Section II-2.1 shall be taken over mechanically by the purchaser.
- 6.3 The performance trials under article 6.4 will be conducted in the presence of authorized representative of -
- a) Representative of purchaser
 - b) Representative of seller
 - c) Representative of the Director General, Vasantdada Sugar Institute, Manjari (Bk), Pune.
 - d) Representative of the Commissioner of Sugar, Maharashtra State
- The performance parameters should be achieved on every day of 15 consecutive full working days for MEE plant.** This should be fulfilled within not less than three months from start of the plant operation.
- 6.4 The seller shall give performance trial to the satisfaction of the Committee constituted as per article 6.3 and the committee should minute the proceedings of their observations indicating clearly whether the performance parameters have been achieved or otherwise. If required the committee may give one more chance to seller for performance trial to be given within a period of one month. After this trial, the committee shall direct future course of action to be taken by Purchaser as per this agreement.
- 6.5 If the purchaser fail to make necessary arrangements including the supply of spentwash for MEE within 180 days after the scheduled date of commissioning, the plant will be deemed to have been taken over by the purchaser and the trial performance guarantee will lapse automatically and the trial will be presumed to have been performed in accordance with the standards laid down in the agreement.

7.0 PURCHASER'S RESPONSIBILITY

- 7.1 The Purchaser shall pay the statutory inspection and other fees and charges payable under the terms of any act or regulations in respect of the installation, operation or use of machinery and equipments. But follow-up work is to be done and approval is to be obtained by Seller at their cost.
- 7.2 The Purchaser shall provide free of cost to the Seller or their Sub-contractors suitable weather protected godown for storage of the equipments, tools and tackles etc. within 150 meters from the Sugar mill compound for the said erection, installation and commissioning work.
- 7.3 If required, available workshop facility will be provided without disturbing the routine maintenance work for erection work and not for fabrication work.
- 7.4 The Purchaser shall provide to the Contractor electrical power at 440 Volts, three phase 50 cycles, 100 HP load at one point for erection within one month from the date of signing of the agreement. Power consumed by the Seller or their Sub-Contractors shall be chargeable for which a separate energy meter will be fitted by Seller.
- 7.5 The Purchaser shall provide at their cost for trial run to the Seller and or their Sub-contractors adequate water supply at Sugar mill site.
- 7.6 The Purchaser shall provide at his cost adequate technical staff and labour including skilled and unskilled for water trials and commissioning and operating the plant and machinery.
- 7.7 The Purchaser shall provide the Seller or their Sub-contractors ordinarily furnished accommodation with drinking water and electricity as and when necessary for erection staff and labour, free of cost during erection work before starting erection.
- 7.8 The Purchaser shall provide motorable approach road from the main road to the site with culverts wherever required.
- 1.9 The Purchaser agreed to sponsor the Seller's requirement of steel under the prevailing SAIL Scheme for priority allotment required for the machinery and equipments to be supplied under this Agreement but the responsibility of getting the required steel quantities shall be Seller's

alone. The inability on the part of the Seller to procure supplies of stainless steel, mild steel, D.O.W. Copper, brass, etc. will not however be deemed to absolve or release in any way the Seller will not be entitled to claim any compensation or any extension of time for that reason.

8.0 PATENT, COPYRIGHT, SECRECY & FORCE-MAJEURE :

Patent and Copyright:

- 8.1 The seller shall hold and save the purchaser their officers, agents, servants and employees harmless from liability of any nature or kind including the costs and expenses for or on account of breach of any copyright or invention or secret process patented or unpatented, articles manufactured or use in the performance of this contract including their use by the purchaser, unless otherwise specifically stipulated in this agreement. In the event of any claims so demand being made or an action being brought against the purchasers for infringement of the patent the seller will indemnify the purchaser against such claims or demand and all costs and expenses arising from or incurred by reason or such claim or demand.
- 8.2 Provided that the purchaser shall notify in writing to the seller immediately if any claim is made and that they shall be at liberty if they so desire with the assistance of the purchaser if required, but at the seller own cost, charges and expenses to conduct all negotiations for settlement of the same or any litigation that may arise there from and provided that in such motion or thing shall be used by the purchaser for any purpose or in any manner other than that for which they have been supplied by the seller as specified in this agreement.
- 8.3 Secrecy:
Any data, information, design, drawing, process know-how and other such documentation pertaining to design, manufacture or plant and machinery being suggested by the seller under this agreement which the seller may discuss and / or elaborate and / or handover to the purchaser

from time to time are of proprietary nature and shall be kept confidential by the purchaser.

The purchaser shall not disclose information on design drawing, process know-how and such documentation to any other third party nor use it for any other purpose other than its intended use without prior written permission from the seller.

8.4 FORCE MAJEURE :

The right of the seller to proceed with the work shall not be terminated as provided in this agreement, because of any delay in completion of the work due to unforeseen cause beyond the control and without the fault or negligence of the seller or sub-contractors including (but not restricted to) act of God or public action, Government in its sovereign capacity, floods, epidemics, quarantine, fires, explosions, accident, civil commission and riots. In the event of any of the aforesaid contingencies unusual or extraordinarily prolonged the purchaser shall be promptly informed by the seller by fax/mail followed by confirmation in writing with documentary proofs within 15 days of the commencement and completion of force-majeure circumstances. The seller for purchaser's information shall submit a list of sub-contractors to the purchaser. The force majeure clause shall also be applicable to sub-contractors.

8.5 The seller shall not transfer their right and obligations arising out of or in relation to this agreement except with consent in writing from the purchaser.

8.6 If the seller shall include to manufacture or supply the plant machinery or to erect and commission the same in order to do so with diligence and expectation or revise or include to comply within a reasonable orders and given to them in writing by the purchaser in connection therewith, the purchasers may give notice in writing to the seller to make good within a reasonable specified time, include or Contravention, completion of and if the seller still think reasonable because fear to complete with the notice within the time specified in the notice, the purchaser may take up the work of manufacture, supply, erection or coordinating of equipment as a whole or in part, either themselves or through any other

process or on a contract at a reasonable price and in that event, the purchaser shall be entitled to recover any excess costs thus incurred by the purchaser and make it good from any bills or dues of the seller pertaining to this agreement or recover the said amount from the seller in any lawful manner according to the arbitration verdict.

9.0 TERMS OF PAYMENTS & BANK GUARANTEE

The Purchaser shall pay the Contract Price in the following manner:

- 9.1 10 % (Ten percent) advance of the contract price for plant and necessary facilities contained in Section III- 3.2 only of this agreement i.e. Rs. -----/- (Rupees-----/-) within 15 (fifteen) days of signing of this agreement, on furnishing of Bank Guarantee by the seller for the said advance in the form annexed to this agreement.

After receipt of advance of 10 %, the seller should submit to the **Purchaser and the Inspection agency** the following within 15 (fifteen) days for approval:

- a. Billing schedule/price break-up and erection schedule
- b. Layout of plant & machinery
- c. Bar chart indicating activities
- d. Dispatch schedule

- 9.2 5 % (Five percent) advance of the contract price for plant and necessary facilities contained in Section III- 3.2 only of this agreement i.e. Rs. -----/- (Rupees-----/-) shall be paid to the seller within 15 days, on furnishing bank guarantee by the seller for the said advance in the form annexed to this agreement

After receipt of advance of 5 %, the seller should submit to the **Purchaser and the Inspection agency** the following within 15 (fifteen) days for approval:

- a. Piping, electrical and instruments particulars and drawings.
- b. List of detailed specifications of bought out items

- c. Utilization certificate of advance.
- d. GA Drawings
- e. Civil & Structural drawings

9.3 65 % (Sixty five percent) of the price referred to above for plant machinery i.e. Rs. -----/- (Rupees -----/-) and the reimbursement of actual amount of Goods & Service Tax (GST), octroi, (custom duty on imported goods, if any) on documentary evidence, after the receipt of material at site and approval of the same. The advance paid under clause 9.1 & 9.2 (i.e. 15%) will be adjusted in this amount. The bank guarantees for advance will be returned to supplier after satisfactory commissioning of multiple effect spentwash evaporation plant.

In case of items are fabricated at site etc. proportionate amount of the bill value will be paid only after completion of fabrication work at site.

In case of bought out items etc. proportionate amount of the bill of individual item will be paid after receipt of total material and assembling all parts at site like pumps & motors, MCC, PLC, Cooling tower, instrumentation, MS/SS plates etc.

Submission of bills and payments:

- a. All the details of GST paid by the supplier shall be shown separately for own manufactured items and for bought out items & to be submitted to the purchaser along with bills by supplier for the reimbursement of the same.
- b. The amount shown in supplier's bill for payment of all such GST will be computed on the basis of all such relevant statutory provisions in force on the date of dispatch and shall the supplier pay the actual amount as.
- c. The payment shall be released by the purchaser within ten days from the date of submission of approved bills.

9.4 10 % against erection of plant & machinery and after Mechanical & Hydraulic trials certified by the inspection agency.

- 9.5 10 % after successful commissioning and performance trial of 15 days for multiple effect spentwash evaporation plant against performance security deposit of 10 % valid for 12 months from the date of successful performance trial. (For more details please refer the draft agreement)

10.0 PENALTIES

If the seller fails to commission and ensure commissioning of plant within the stipulated time fixed or fail to give satisfactory performance of the plant as per the performance guaranteed herein agreement, the seller shall pay liquidated damages as specified below :-

10.1 Multiple effect spentwash evaporation plant

The following penalties will apply individually & separately for above unit.

10.1.1 Delayed Commissioning: -

5 % of the contract price shall be deducted for delayed commissioning every fortnight from scheduled programme, maximum upto 10 % of the contract price.

10.1.2 Liquidated damages for failure of guaranteed performance.

10.1.2.1 Rs. 5 Lac shall be deducted from the contract price for every 5% drop in evaporation duty than guaranteed figures (i.e. 19.375 M³/day) during the performance guarantee of continuous running of plant for 15 days subject to maximum 5% of the contract price.

10.1.2.2 Steam consumption -

Rs. 5 Lac shall be deducted for every 0.2 MT/hr increase in steam consumption at any stage than guaranteed figures subject to a maximum 5 % of the contract price for plant.

10.1.2.3 Power consumption and chemical requirement -

Rs. 5 Lac shall be deducted for every 10 kwh increase in power consumption at any stage than guaranteed figures for MEE subject to a maximum 5 % of the contract price for each plant.

10.1.2.4 In the unlikely event if the technical know-how and the plant and machinery mentioned in section II –2.1 of this agreement does not work up to the performance limits mentioned in the annexure and if the specified quality of produce is not obtained, then the seller shall reimburse all the sum of money paid by the purchaser to the seller with 24% interest along with other expenses including civil work & other items in respect of this project.

The seller may be entitled to take back at his own cost all plant and machinery, accessories and other items brought by him. In case the seller is new entrant in this field or the technology is now, then the seller shall give the purchaser bank guarantee for the entire total price of the plant.

11.0 ARBITRATION, NEGLIGENCE, TRANSFERABILITY, PACKING, EXCESS MATERIAL

11.1 ARBITRATION:

If at any time, any question, dispute or difference, whatsoever, shall arise between the seller & purchaser arising out of or in connection with the stipulation of this contract except those which are expressly hereinafter excluded from the ambit of arbitration, the parties hereto shall use their best efforts to settle such question, dispute or difference amicably by mutual negotiations should the contract not be reached in respect therewith, either party may be giving to the other a notice in writing of the existence of such question, dispute or differences refer the same for Arbitration

Proceedings as per the provision of Arbitration Act 1940 and the rules there under inclusive of any modification or replacement thereof. Venue of Arbitration will be at **Latur (Maharashtra)**.

11.2 Jurisdiction:

All court proceeding shall subject to jurisdiction of the **Latur (Maharashtra)** they shall have jurisdiction to try all disputes and matters arising out of and under the agreement.

11.3 Negligence of the seller:

If the seller shall neglect to manufacture or supply the plant and machinery or to erect and commission the same or to dismantle, modify strengthen, re-erect and commissioning the existing equipment (Section II-2.1) or to dismantle and shift outside the Sugar mill building, the existing equipment to be discarded with due diligence and expedition or refuse or neglect to comply with any reasonable orders given to them in writing by the purchaser in connection therewith, the purchasers may give notice in writing to the sellers to make good within a reasonable specified time, the failure neglect or contravention complained of and if the seller still without reasonable cause fail to comply with the notice within the time specified in the notice (to be reckoned from the date of receipt of notice by the sellers), the purchaser may take over the work of manufacture, supply, erection, dismantling and re-erection of existing machinery or commissioning of equipments as a whole or in part out of the sellers hand/or may give it to another person on contract at a reasonable price and entitled to recovery any excess cost thus incurred by the purchasers or make it good from any bills or dues of the sellers pertaining to this agreement or recover such amount from the seller in any lawful manner.

11.4 **TRANSFERABILITY OF THE CONTRACT:**

The seller shall not transfer their right and obligations arising out of or in relation to this agreement except with the consent in writing to the purchaser.

11.5 **PACKING MATERIAL:**

Since the cost of packing material will be borne by the purchaser, all containers (including packing cases, boxes, tins, drums and wrappings,

etc.) in which machinery and equipments and stores will be supplied, shall be considered non-returnable to the seller.

11.6 EXCESS MATERIALS:-

To expedite erection work, seller may bring on the site materials such as piping, valves, fittings, consumptions and wires, hardware, insulation materials, refractory bricks, lubricants, paints, etc., more than actually required for completion of work as per this agreement. The seller, with the prior approval of the purchaser, shall take such material as are found surplus after the completion of erection back. Any materials including tools and tackles etc., brought by the sellers at the site and not paid for by the purchasers can be taken out by the sellers after the purchaser's approval.

12 MAINTENANCE/ WARRANTY: -

12.1 For a period of 12 months from the date of commissioning of plant (called the warranty period) or the seller shall be liable to rectify / replace the plant and machinery or parts thereof, such as may be found to be defective or below the rated capacity under proper use according to seller's written instruction and arising due to faulty design, material workmanship or erection or otherwise In case may be the purchaser or it's inspection agency shall give the seller notice in writing setting out the particulars of the defects or failure and the seller shall thereupon rectify the defective or under-rated equipments or replace the same free of cost to make it comply with the requirement of the Agreement. If the seller fail-to do so within reasonable time the purchaser may rectify and / or replace by giving prior intimation at the cost of the seller the whole or any portion of the equipment, as the case may be which is defective or under-rated or fail to fulfill the requirement of this agreement and, may recover the actual cost thereof from the seller or adjust the same from any balance payment to be made to the seller or by invoking the performance bank guarantee or recover the same by raising the debit note or otherwise.

- 12.2 The purchaser within shall carry out such rectification/replacement as short a time as possible and at a reasonable price under advice to the seller. In case of such rectifications/replacement done and the defective equipment on being replaced shall be taken away by the seller at their own cost. The purchaser shall have the right to operate any and all equipment after the commissioning date of the plant except that this shall not be considered to permit operation of any equipment which may be materially damaged by such operation before any required rectification alternation have been carried out.
- 12.3 If it becomes necessary according to the seller to replace or renew any defective part of the machinery under this clause, the provision of warrantee period shall apply to the parts of the plant and machinery so replaced or renewed within of eight months from the date of completion until the end of the aforesaid warrantee period of as defined above whichever is later.
- 12.4 The rectification or new parts will be delivered F.O.R. Purchase Sugar mill site. The Sellers shall also bear the cost of rectification/replacement carried out on their behalf by the purchasers as mentioned above at the site. At the end of the maintenance period, Sellers' liability shall cease. In respect of plant and machinery not covered by the first paragraph of this clause, the purchaser shall be entitled to the benefit of any guarantee given to the sellers by the original suppliers or the manufacturers of such plant and machinery.
- 12.5 The responsibility of the Seller for rectification/replacement under this clause shall extend to the actual cost of rectification/replacement of the defective items of plant and machinery and shall not in any way, be deemed to be limited to the amount of the performance guarantee.
- 12.6 The seller shall provide one supervisor at their own expenses for first three months of the multiple effect spent wash evaporation plant trial in order to assist the purchasers in the working and maintenance of the said plant covered under this agreement.

13.0 GROUND ENTITLING THE SELLER TO EXTENTION OF TIME OF THE COMMISSIONING OF THE SUPPLIED PLANT.

The seller shall not be entitled to any extension of time for any reason whatsoever, except the following:

- 13.1 If the purchaser orders expressly in writing for the supply and/or execution of the work by the seller to be suspended for a substantial period of time for no fault of the seller, the seller shall be entitled to reasonable execution of time.
- 13.2 If the purchaser, fails to fulfill the responsibility as stipulated in Clause 7.2 for a substantial period the sellers shall be entitled to a reasonable extension of time.
- 13.3 If the purchaser fails to open the Letter of credit after the expiry of due date of opening of Letter of Credit or fail to make arrangements for retiring the documents of the seller through bank for a period of orders after submission of the same, the seller shall be entitled to a reasonable extension of time as may be mutually agreed upon and provided the seller have complied with all contractual obligations which have become due to up to time.
- 13.4 The seller shall be entitled to a reasonable extension of time due to force majeure clause as per clause 8.4 of this agreement.

14. SELLER TO INFORM THEMSELVES FULLY: -

The seller shall be deemed to have noted that the time is the essence of the contract and have carefully examined and satisfied themselves as to the terms and conditions, specifications, schedules, appendices and drawings, etc., mentioned in annexure annexed to this agreement.

- 14.1 This agreement including the annexure, annexed hereto has been executed in two copies; the original remains with the purchaser and the second copy will remain with the seller. By signing this agreement, both the parties the purchaser and the seller agreed to able by its clauses. Any alternations, amendments or changes in this agreement or its Annexure, etc., will be valid if agreed to by and between the purchasers and sellers.

SECTION - V

**A FORMAT FOR BANK GUARANTEE
(For Advance & Performance)**

DRAFT OF BANK GUARANTEE FOR PERFORMANCE

THIS GUARANTEE MADE THIS _____day of _____
Rs. _____by the _____ Bank, having its
branch office at _____, (hereinafter called '**The Guarantor**'
which expression shall, unless repugnant to the context or contrary to the
meaning thereof, include its successors and assignees) of the one part in favour
of _____, a Society registered under the
Maharashtra State Co-operative Societies Act, 1960 and having its registered
office located at **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli,
Tal. & Dist. Latur, Maharashtra State** (hereinafter called '**The Purchaser**'
which expression shall, unless repugnant to the context or contrary to the
meaning thereof include its successors and assignees) of the other part.

WHEREAS M/s. _____ a company
registered under the Indian Companies Act, 1913 having its registered office at
_____ and chief place of business at
_____ (hereinafter called '**The Seller**' which
expression shall unless repugnant to the subject or context include their legal
representatives, administrator, successors or permitted assignees) has entered
into with the Purchaser an agreement dated _____ (hereinafter called
the said **Agreement**) to design, manufacture, procure, supply Machinery and
Equipment for the Purchaser's proposed Multiple effect spentwash evaporation
plant at **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. &
Dist. Latur, Maharashtra State** in accordance with the terms and conditions
therein contained (hereinafter referred to as 'the said Machinery and
Equipment').

AND WHEREAS under clause _____ of the said Contract, the Seller are required to furnish to the Purchaser a Bank Guarantee in respect of guaranteed performance of the Machinery and Equipment supplied by the Seller as referred to in clause _____ of the said Contract for Rs. _____ (Rs. _____ only) representing 10 % of the contract price (value of the order) mentioned in the section –IV clause 4 – Contract price & clause 9-Terms of payments & Bank Guarantee.

AND WHEREAS the Guarantor has at the request of the Seller agreed to give the guarantee as hereinafter appearing.

NOW THIS DEED WITNESSES AS FOLLOWS:

- 1.0 In consideration of the performance guarantee the Guarantor hereby undertakes to pay to the Purchaser within 30 days of demand and without demur such a sum not exceeding Rs. _____/- (Rs. _____ only) representing 10% of the Contract Price as the Purchaser may demand, and if the Guarantor shall fail to pay the same within the said period, the Guarantor shall also pay on the sum demanded interest at the bank lending rate then prevailing reckoned from the said 30 days till the date of payment.
- 2.0 The Guarantor shall pay to the Purchaser on demand the sum under Clause 1 above without demur and without requiring the Purchaser to invoke any legal remedy that may be available to them, it being understood and agreed, FIRSTLY that the Purchaser shall be the sole judge of and as to whether the Seller have committed breach / or breaches, of any of the terms and conditions of the Agreement and to the extent of loss, damage, costs, charges and expenses caused to or suffered by the Purchaser from time to time shall be final and binding on the Guarantor and SECONDLY that the right of the Purchaser to recover from the Guarantor any amount due to the Purchaser shall not be affected or suspended by reasons of the fact that any dispute or disputes have been raised by the Seller with regard to their liability or

that proceedings are pending before any Tribunal, Arbitrator(s) or Court with regard thereto or in connection therewith, and THIRDLY that the Guarantor shall immediately pay the aforesaid guaranteed amount to the Purchaser on demand and it shall not be open to the Guarantor to know the reasons of or to investigate or to go into the merits of the demand or to question or to challenge the demand or to know any fact affecting the demand and LASTLY that it shall not be open to the Guarantor to require proof of the liability of the Seller to pay the amount before paying the aforesaid guaranteed amount to the Purchaser.

- 3.0 This guarantee is in addition to and not in substitution for any other guarantee executed by the Guarantor in favour of the Purchaser on behalf of the Seller.
- 4.0 The Seller and the Purchaser will be at liberty to vary and modify the terms and conditions of the said Agreement without affecting this guarantee, notice of which modifications to the Guarantor is hereby waived and the same shall be deemed to have been done with the assent of the Guarantor.
- 5.0 This guarantee shall not be affected by any change in the constitution of the Guarantor or of the Seller nor shall the guarantee be affected by the change in the constitution of the Purchaser or by amalgamation or absorption with any other body corporate and this guarantee will be available to or enforceable by such body corporate.
- 6.0 The neglect or forbearance of the Purchaser in enforcing any payment of moneys, the payment whereas is intended to be hereby secured or the giving of time by the Purchaser for the payment thereof shall in no way release the Guarantor from its liability under this deed.
- 7.0 This guarantee is irrevocable except with the written consent of the Purchaser.
- 8.0 This guarantee shall come into force from the date hereof and shall remain valid for 12 months from the date of performance trial, but if the period of the contract is for any reason extended and upon such extension if the seller fail to furnish a fresh or renewed guarantee for the said extended period, the Guarantor shall pay to the Purchaser the said

sum of Rs. _____/- (Rs. _____ only) or such lesser sum as the Purchaser may demand.

- 9.0 The invocation of this guarantee shall be by a letter signed by the Purchaser and countersigned by the Director of Sugar, Maharashtra State, Pune.
- 10.0 Notwithstanding anything stated hereinbefore the liability of the Guarantor under this guarantee is restricted to Rs. _____/- (Rs. _____ only). This guarantee shall remain in force upto _____. Unless a demand or action under this guarantee is presented to the Guarantor in writing within one month from the date of expiry all rights of the Purchaser under this guarantee shall be forfeited and the Guarantor shall be released and discharged from all liabilities hereunder.

IN WITNESS WHEREOF _____ for and on behalf of the Guarantor have signed this deed on the day and year above written.

Witness: _____

For and on behalf of the Guarantor

B. BANK GURANTEE FOR EARNEST MONEY DEPOSIT (EMD)

This guarantee made this ---- /---- / 2019 for Rs ----- Lac (Rs.----- only) by the -----Bank, the Bank having its branch office at -----, Tal.-----, Dist.----- (here-in-after called the Guarantor which expression shall, unless repugnant to the context or contrary to the meaning thereof, include it successor and assignees) of the one part in favour of **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur, Maharashtra State** a society registered under the Maharashtra State Co-operative Society Act, 1960 and having its registered office at **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur, Maharashtra State** (here-in-after called as Purchaser here-in-after called the Guarantor which expression shall, unless repugnant to the context or contrary to the meaning thereof, include it successor and assignees) of the other part.

Whereas ----- a company registered under the Indian Companies Act 1956 having its registered office at----- ---- and chief place of business at ----- (here-in-after called as the Bidder which expression shall, unless repugnant to the subject or context include their legal representatives administrator, successor, or permitted assignees) is participating in a Tender (here-in-after called the said Tender) to design, manufacture, supply machinery and equipment for the purchaser proposed ----- plant at **Vilas Sahakari Sakhar Karkhana Ltd., Vaishalinagar, Nivli, Tal. & Dist. Latur, Maharashtra State** in accordance with the terms and conditions therein contain in the tender document (here-in-after referred to as the said machinery and equipment)

And whereas under section I -3 clause 4, TERMS and CONDITIONS of the said Tender document, the Bidder is required to furnish to the Purchaser a Bank Guarantee in respect of Earnest Money Deposit for Rs.-----/- Lac (Rs. -----Lac) mentioned section I -3 clause 4- Earnest Money Deposit.

And Whereas the Guarantor has at the request of the Bidder agreed to give the guarantee as here-in-after appearing.

NOW THIS DEED WITNESSES AS FOLLOWS:

- 1.0 In consideration of the Earnest Money Deposit the Guarantor hereby undertakes to pay to the Purchaser within 30 days of demand and without demur such a sum not exceeding Rs. -----/- Lac (Rupees -----Lac) as the Purchaser may demand, and if the Guarantor shall fail to pay the same within the said period, the Guarantor shall also pay on the sum demanded interest at the bank lending rate then prevailing reckoned from the said 30 days till the date of payment.

- 2.0 The Guarantor shall pay to the Purchaser on demand the sum under clause 1 above without demur and without requiring the Purchaser to invoke any legal remedy that may be available to them, it being understood and agreed, FIRSTLY that the Purchaser shall be the sole judge of and as to whether the bidder have committed breach /or breaches, of any of the terms and conditions of the Agreement and to the extent of loss, damage, costs, charges and expenses caused to or suffered by the Purchaser from time to time shall be final and binding on the Guarantor and SECONDLY that the right of the Purchaser to recover from the Guarantor any amount due to the Purchaser shall not be affected or suspended by reason of the that any disputes have been raised by bidder with regard to their liability or that proceedings are pending before any Tribunal, Arbitrator(s) or Court with regard thereto or in connection therewith, and THIRDLY that the Guarantor shall immediately pay the aforesaid guaranteed amount to the Purchaser on demand and it shall not be open to the Guarantor to know the reason of or to investigate or to go into the merits of the demand or to question or to challenge the demand or to know any fact affecting the demand and LASTLY that it shall not be open to the Guarantor to require proof of the liability of the bidder to pay the amount before paying the aforesaid guaranteed amount to the Purchaser.

- 3.0 This Guarantee is in addition to and not in substitution for any other guarantee executed by the Guarantor in favor of the Purchaser on behalf of the bidder.
- 4.0 The bidder and Purchaser will be at liberty to vary and modify the terms and condition of the said Tender. Without affecting this guarantee, notice of which modifications to the Guarantor is hereby waived and the same shall be deemed to have been done with the assent of the Guarantor.
- 5.0 This guarantee shall not be affected by any change in the constitution of the Guarantor or of the bidder nor shall the guarantee be affected by the change in the constitution of the Purchaser or by amalgamation or absorption with any other body corporate and this guarantee will be available will be available by such body corporate.
- 6.0 The neglect or forbearance of the Purchaser in enforcing any payment of moneys, the payment whereas is intended to be hereby secured or the giving of time by the Purchaser for the payment thereof shall in no way release the Guarantor from its liability under this deed.
- 7.0 This guarantee shall is irrevocable except with the written consent of the Purchaser.
- 8.0 This guarantee shall come into force from the date hereof and shall remain valid for 120 days from the date of submission of the tender i.e. -----/--- -----/2019. The Guarantor shall pay to the Purchaser the said sum of Rs. -----/- Lac (Rs. ----- Lac) or such lesser sum as the Purchaser may demand.
- 9.0 The invocation of this guarantee shall be by a letter signed by the Purchaser and countersigned by the Commissioner of Sugar, Maharashtra State, Pune.

10.0 Not with standing anything stated hereinbefore the liability of the Guarantor under this guarantee is restricted to Rs. -----/- Lac (Rupees ----- Lac). This guarantee shall remain in force up to -----/-----/2019. Unless a demand or action under this guarantee is presented to the Guarantor in writing within one month from the date of expiry all rights of the Purchaser under this guarantee shall be forfeited and the Guarantor shall be released and discharged from all liabilities hereunder.

IN WITNESS WHERE OFfor
and on behalf of the Guarantee have signed this deed on the day and year
above written.

Witness:.....
.....

For and on behalf of the Guarantor

=====

**MULTIPLE EFFECT SPENTWASH EVAPORATION PLANT
SUPPLIERS**

- * Praj Industries Limited,
Praj Tower, 274/75,
Hinjawadi, Lonkar Chowk,
Phase-III, Pune.
Ph. No.- 020-22951511, 22952214
Fax – 020 – 22951515 / 22951718.
email-info@praj.net

- * S. S. Techno Services Pvt. Limited,
502, Mayfair Tower I, Wakdewadi,
Shivajinagar, Pune- 411005.
Ph. No.- 020- 66524431/32/33
Fax – 020- 66524434.
email-marketing@sstechno.com

- * Mojj Engineering System Limited,
81-B/15, M.I.D.C., Bhosari,
Pune – 411026. (M.S.)
Ph. No.- 020-27120835, 27122837, 27122838
Fax – 020 – 27127198.
email-mojjpune@vsnl.net

- * Universal Forces Industries Ltd,
“Universal Center”
Plot No. 130C, Sec. No. 10, PCNTDA,
Bhosari, Pune-411026.
Ph. No. 020-66339672/27690744
Fax No. 020-66339673
email-ufisales1@gmail.com

- * Raj Process Equip. and Systems Pvt. Ltd.,
Jai Ganesh Vision, B wing, 3rd floor,
Jai Ganesh Fame Building, Akurdi, Pune
Ph. No.- 020- 40710010
Fax – 020- 40710009.
email-rajindustries@vsnl.net

- * Naran Lala Pvt. Limited,
Post Box No. 20,
Near Railway Station,
Navsari – 396445, (G.S.)
Ph. No. 02637-250371/256192
Fax No. 02637-252092
email-technical@naranlala.com

- * Meru Industries,
S-31, T Block, Near Pawana Industrial Complex
MIDC, Bhosari, Pune-411026
Ph. No.- 020- 27110181, 27119308
Fax – 020- 27122948.
email-meruindustries@gmail.com

- * KBK Chem Engg. Pvt. Ltd.,
KBK-House, I -Dot Complex, Survey No. 13/3/7
NDA Pashan Road, Near Maratha Mandir Hall
Bavdhan Khurd, Pune-411021
Ph. No. 020-22953685
Fax No. 020-22951939
email-kbk@vsnl.net