E-TENDER FOR RLNG BURNERS FOR ROTARY DRYERS

Tender No. MM/172/E21520 Dated 11-05-2020
(Tender ID: No. 2020_FACT_558529_1)

Bids are invited for Supply, Installation and commissioning of RLNG BURNERS and spares for Rotary Dryers of FACT Udyogamandal Division, as per terms and conditions.

Interested parties may visit our website (www.fact.co.in) or Central Public Procurement Portal (http://eprocure.gov.in) for tender details and further updates on the Tender including extension of due date, corrigendum if any. No further News Paper Advt. shall be given

Pre-Bid Meeting: 10.30 a.m. on 21-05-2020 at FACT PD conference Room, Udyogamandal
Due date/time for submission of bids: 02-06-2020/2.00p.m.
Part-A Bids will be opened at 2.30 p.m. on 03-06-2020

Dy GENERAL MANAGER (MATERIALS)
TENDER No. MM/172/E21520 Dated 11-05-2020

Bids are invited from experienced and financially sound parties for supply, supervision for installation and commissioning of RLNG burners and spares for Rotary Dryers of FACT’s plants at Udyogamandal Division, Udyogamandal.

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<td>Pre-Bid Meeting</td>
<td>10.30 a.m. on 21-05-2020 at FACT PD conference Room, Udyogamandal, Eloor, Ernakulam Dist., Kerala</td>
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<td>Due date &amp; time for Submission of bids</td>
<td>02-06-2020/2.00 P.M.</td>
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<tr>
<td>Date &amp; Time for Part-A Bid opening</td>
<td>03-06-2020/2.30 P.M.</td>
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<td>Name of Work/Description</td>
<td>Supply, installation and commissioning of RLNG burners and spares for Rotary Dryers of FACT’s AMOFOS Plants at FACT-UD as per technical specifications, terms and conditions of tender.</td>
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<tr>
<td>EMD</td>
<td>Rs. 1,00,000/- by NEFT/RTGS</td>
</tr>
<tr>
<td>Contact Details</td>
<td>1) T. Chidambaranathan, Dy General Manager (Materials) Phone: 0484-2568646, email: <a href="mailto:chidambaram@factltd.com">chidambaram@factltd.com</a> 2) Sreekanth.S, MT (Materials) Phone: 0484-2568253; email: <a href="mailto:sreekanth.s@factltd.com">sreekanth.s@factltd.com</a></td>
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Detailed specifications and other terms and conditions are mentioned in the Tender Documents.

NOTE:-
1. The Tender Documents can be downloaded from our website www.fact.co.in or Central Public Procurement Portal (http://eprocure.gov.in)
2. Offers against this NIT shall be submitted online on e-Tendering portal https://eprocure.gov.in, as per the Instructions to Bidders attached. Offers submitted on any other platform or in any other mode including e-mails, physical offers etc. shall not be accepted.
3. FACT reserves the right to accept/reject any request for extension of the due date of tender.
4. FACT reserves the right to accept/reject any or all bids at any stage without assigning any reason thereof.
## PRE-QUALIFICATION CRITERIA

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<th>Documents to be submitted along with bid.</th>
<th>Remarks</th>
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| 1      | Bidder shall be either Original Equipment Manufacturer (OEM) OF Burner system for RLNG/NG OR Authorized Supplier/Distributor of OEM | a) If the Bidder is OEM, Self-Declaration along with details of manufacturing facility with full contact address  
b) If the Bidder is authorised Dealer /Distributor, an Authorisation letter from the Original Equipment Manufacturer (OEM) in their letter head along with details of manufacturing facility. | Self declaration or Authorisation letter is a must | |
| 2      | The bidder should have carried out Design, supply & erection of at least one burner system for RLNG/NG giving at least 80% of the maximum heat duty of the burner offered during the last seven (7) years preceding the date of the tender, which should be in operation rendering satisfactory performance. | a) Copies of relevant Purchase Orders / Work Orders  
b) Copies of Completion Certificate / MOM issued by end user with PO/WO references in proof of successful completion as well as performance of the same | Completion Certificate / MOM shall clearly indicate date of commissioning and satisfactory performa-nce of the burner system having at least 80% of the heat duty of the offered one to FACT. | |
| 3      | The Bidder shall submit an undertaking for spares and service support for at least ten (10) years' after guarantee / warranty period for the offered burner system/s | a) In case of Manufacturer, self- declaration by manufacturer, confirming ten (10) years' guarantee for spare and service support  
b) In case of Authorised Dealers, 10 years' guarantee from original manufacturer for spare and service support | Relevant documents required | |
| 4      | a) Average annual turnover of the bidder for the last three financial years ending on 31-03-2019 shall be Rs. 400 lakhs or above  
And  
b) Annual turnover for each year shall be minimum Rs. 60 lakhs during the last three financial years ending on 31-03-2019 | Copies of audited financial statements (Profit & Loss Account and Balance Sheet) for the last three financial years ending on 31-03-2019 (2016-17, 2017-18 & 2018-19) | Relevant documents required | |

Note:
1) FACT shall have liberty to verify the references submitted by the Bidders with users.
2) Pre-Qualified bids will only be considered for Technical Evaluation. Technically and commercially acceptable Bids will only be considered for Price Bid opening.
3) Submission of authentic documents for meeting the above technical and financial criteria is the prime responsibility of the Bidder. Wherever FACT has concern or apprehension regarding the authenticity/ correctness of any document, FACT reserves the right of getting the documents cross verified from the document issuing authority.
4) IMPORTANT: In case of ambiguity or incomplete or non submission of required relevant documents along with bid, FACT reserves the right, at its option, to reject the Bidders Bid without assigning any reason and without notice.
**CHECK LIST FOR COMMERCIAL TERMS**

All the columns shall be filled properly with say, "confirmed", without leaving blanks. Abbreviations like "N.A." etc., shall not be used, instead, to be given in expanded form. Clauses against which specific confirmation is not furnished shall be considered as bidder accepting FACT terms of enquiry.

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<th>Bidder Confirmation</th>
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<td>1</td>
<td><strong>VALIDITY OF OFFER:</strong> 120 Days from the date of bid opening (Part-A, in the case of 2-part bids)</td>
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<td>2</td>
<td><strong>Earnest Money Deposit:</strong> Shall be submitted by RTGS/NEFT in favour of FACT Ltd., if applicable as per enquiry. (Exempted for Govt. firms/PSEs/MSE Units / Start ups / firms registered under NSIC/Khadi Board etc. on submission of valid documentary evidence.)</td>
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<td>3</td>
<td><strong>Pre-Qualification Criteria:</strong> All relevant documents shall be submitted, if applicable, as per enquiry</td>
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<td>4</td>
<td><strong>PRICE:</strong> Firm till completion of supplies</td>
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<td>5</td>
<td><strong>PRICE BASIS:</strong> FOR FACT Stores as per enquiry. If not, please specify.</td>
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<td><strong>GST:</strong> GSTIN Regn No. &amp; GSTIN State</td>
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<td>6.1</td>
<td>In case of unregistered supplier, whether declaration to that effect is uploaded</td>
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<td>6.2</td>
<td>Place of supply</td>
<td></td>
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<td>7</td>
<td><strong>INSURANCE:</strong> Transit Insurance shall be arranged by Supplier</td>
<td></td>
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<td>8</td>
<td><strong>SIZE:</strong> Approximate weight and size of the consignment(s)</td>
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<td>9</td>
<td><strong>PAYMENT:</strong> As per clause 3 of Special Terms and conditions.</td>
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<td>10</td>
<td><strong>SECURITY DEPOSIT:</strong> @ 5% of the basic order value [applicable for orders of value above ₹ 5,00,000/- (Rs Five Lakhs)]</td>
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<td>11</td>
<td><strong>GUARANTEE:</strong> As sought in the Enquiry</td>
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<td>12</td>
<td><strong>PERFORMANCE BANK GUARANTEE:</strong> @ 10% of the basic order value, if specified in the enquiry.</td>
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<td>13</td>
<td><strong>DELIVERY PERIOD/COMPLETION PERIOD:</strong> Please specify the delivery / completion period offered, in number of Weeks.</td>
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<td>14</td>
<td><strong>DELAY IN DELIVERY:</strong> For orders of basic price above ₹ 25,000/-, Liquidated Damages (LD) will be recovered if delivery is delayed beyond the delivery period stipulated in the order @0.5% per week of delay or part thereof, limited to a maximum of 7.5% of the total basic order value</td>
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<td>15</td>
<td><strong>JURISDICTION:</strong> Any legal proceedings relating to the Order shall be limited to courts of law under the jurisdiction of the Kerala High Court at Ernakulam.</td>
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<td>16</td>
<td><strong>MICRO, SMALL OR MEDIUM ENTERPRISES</strong></td>
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<td>16.1</td>
<td>In case the supplier is registered as Micro, Small or Medium Enterprise under the 'Micro, Small and Medium Enterprises Development (MSMED) Act 2006', please indicate the relevant category and also specify whether the firm is owned by SC / ST / women entrepreneurs. Valid documentary evidence shall be uploaded.</td>
<td></td>
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<td>16.2</td>
<td>Declaration of UAM Number in the CPP Portal is required for availing MSME benefits under PP Policy for MSEs, for tenders invited through CPP Portal. Confirm whether UAM Number is declared in the CPP Portal.</td>
<td></td>
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<td><strong>MAKE IN INDIA:</strong> For claiming benefits under Preference to Make in India order, please give following details:</td>
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<td>17.1</td>
<td>Whether the item(s) offered meets the minimum local content</td>
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17.2 Location(s) at which the local value addition is made

18 Bidder’s offer Reference Number and Date:

19 Address to which PO is to be placed:

**COMPLIANCE STATEMENT**

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<th>Reason for Deviation</th>
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<tr>
<td>Commercial</td>
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We hereby confirm that our offer Ref. No: .......................... dated ................. against FACT enquiry No.MM/.......................... dated .................. is in full compliance with the technical specifications and other terms and conditions of the enquiry including all attachments thereto, except for the deviations mentioned above.

Place:

Date: 

Office Seal 

Signature, Name & Address of the authorized official

**Notes:**

1. Bidders are advised not to take deviations from the enquiry specifications. FACT reserves the right to reject the offers with deviations without further correspondence.
2. Offers will be evaluated with landed cost to the company including packing and forwarding, freight, taxes & duties and all other extra charges applicable.
3. For deviations in the quoted payment term with regard to the payment term specified in the enquiry, suitable loading with interest at the rate of 15% per annum for early payment shall be done, if the quoted term is acceptable to FACT. Please note that, **no advance payment will be given.**
4. For deviations in other terms and conditions, if such deviations are acceptable to FACT, the price quoted shall be loaded suitably, if specified in the enquiry, taking into account the deviations taken by the bidder.
SPECIAL TERMS AND CONDITIONS OF PURCHASE

ENQUIRY NO. MM/172/E21520  Dated 11-05-2020

1. SCOPE OF WORK

Study of existing system, Design, engineering, Manufacture, Inspection, Testing, Supply, Installation & Commissioning and Performance Guarantee test run of R LNG Burner/s for Rotary Dryers in AMOPHOS(NP) plants of FACT UD as per Technical Procurement Specifications (TPS No. UC-TS-TPS/2020-01/ R0), terms and conditions of tender.

2. SITE

Delivery of the item/s is/are required at FACT Udyogamandal Fertiliser Division at Eloor, Udyogamandal.

3. TERMS OF PAYMENT

Supply: 80% of the supply value as per agreed billing schedule, limited to a maximum of 70% of the total value of this work (supply, installation & commissioning), will be paid within 30 days after receipt and acceptance of the supplies at site. Balance shall be paid on satisfactory completion of installation & commissioning of the system, issue of take over certificate and against submission of Performance Bank Guarantee (PBG) for an amount equivalent to 10% of the total order value (supply, installation & commissioning), valid till the end of the guarantee period plus a claim period of 6 months thereafter.

Supervision of Erection & Commissioning: 100% of the payment shall be made within 30 days after successful commissioning and takeover of the system against invoice, commissioning report and submission of performance bank guarantee as above.

4. DELIVERY PERIOD

Delivery period (preferred) FOR supply shall be 3 (three) months from the date of drawing approval. Drawing for approval shall be submitted within 10 days of receipt of LOI/PO. However, vendors can offer their best possible delivery period. Supervision of Erection and commissioning shall be completed within two months of site clearance.

5. WARRANTY:

The material under order shall be guaranteed against poor workmanship, design, material and performance for a period of 12 months from the date of commissioning or 24 months from the date of supply, whichever is earlier, as per the details given in the Technical Procurement Specification.

6. PERFORMANCE GUARANTEE:

The bidder shall provide performance guarantee to the effect that the system will meet the requirements set forth in the PO with respect to quality, specifications and performance. To ensure optimal performance of the system supplied by the bidder till the completion of warranty, a Performance Bank Guarantee (PBG) of 10% of the total order value (supply value) shall be submitted in the respective format till the completion of warranty period.
7. SPARES:

Only Lump sum prices shall be quoted for Mandatory spares in Bill of Quantity(BOQ) in CPP Portal. Price break up of Mandatory spares as per FACT’s TPS shall be necessarily furnished after price bid opening. Prices of mandatory spares shall be considered for price evaluation.

8. PRICE EVALUATION

For price evaluation, supply value + supervision of Erection & commissioning charges + mandatory spares+ other items of price bid loading as applicable shall be taken for consideration in addition to applicable P&F, Freight, GST, price loadings etc for each burner system separately.

9. ORDER PLACEMENT

Separate Orders shall be issued on L1 basis for each burner. If L1 is same for both burners, single order shall be issued.

10. ORDER OF PRECEDENCE

In the event of any conflict between this Special Terms & Conditions and the Terms and Conditions mentioned elsewhere in the enquiry document, the former shall prevail to the extent applicable.

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**UN-PRICED PRICE BID**

**PROJECT**
Design, supply, Supervision of Erection and Commissioning with supply of mandatory spares of new RLNG Fuel firing system for Rotary Dryers as per Technical Procurement Specification (TPS No. UC-TS-TPS / 2020-01/ R1)

**ENQUIRY NO** : MM/172/E21520 Dated 11-05-2020

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<th>Sl. No.</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Rate (strike off whichever is not applicable)</th>
<th>Total Price P&amp;F, if applicable (%)</th>
<th>GST (%)</th>
<th>Freight Charges upto destination, if extra (%)</th>
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</table>

**A. RLNG firing system for 300 TPD Amophos Plant**

1.1 Supply portion of RLNG burner system : Design, Testing inspection and Supply of LNG Fuel firing system as per Technical Procurement Specification (TPS) including supply of burner block, adapter plate/ arrangement for existing FO burner mounting etc., new blower with motor and accessories, drawings for the modification works of existing burner combustion chamber (as required), refractory lining materials (all layers) for burner combustion chamber (as required) and hot gas chamber (as required)  
1  LS  QUOTED / NOT QUOTED

1.2 Supply of Mandatory Spares as per list attached in Technical Procurement Specification (TPS)  
1  LS  QUOTED / NOT QUOTED

1.3 Supervision of Erection & Commissioning of RLNG firing unit: Supervision of erection & hook up to the existing unit, Commissioning, documentation, and carrying out successful performance testing etc. of RLNG Fuel firing system as per Technical Procurement Specification (TPS)  
1  LS  QUOTED / NOT QUOTED

**Total Price (INR) for firing system (RLNG) for 300 TPD Amophos plant**

**B. RLNG firing system for 150 TPD Amophos Plant**

2.1 Supply portion of RLNG burner system : Design, Testing, Inspection and Supply of LNG Fuel firing system as per Technical Procurement Specification (TPS) including supply of burner block, adapter plate/ arrangement for existing FO burner mounting etc., new blower with motor and accessories and drawings for the modification works of existing burner combustion chamber (as required), refractory lining materials (all layers) for burner combustion chamber (as required) and hot gas chamber (if required)  
1  LS  QUOTED / NOT QUOTED

2.2 Supply of Mandatory Spares as per list attached in Technical Procurement Specification (TPS))  
1  LS  QUOTED / NOT QUOTED
### Total Price (INR) for firing system (RLNG) for 150 TPD Amophos plant

<table>
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<th>Notes</th>
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<td>1. Bidder to complete all columns for each item separately.</td>
</tr>
<tr>
<td>2. The total Amount shall include all items and works required for the complete system as per scope &amp; TPS.</td>
</tr>
<tr>
<td>3. The total system shall be supplied with all accessories, certificates and documents as required and the cost shall be included in the price quoted.</td>
</tr>
<tr>
<td>4. Price column shall be filled with ‘QUOTED’ or ‘NOT QUOTED’ (strike out whichever is not applicable). Percentage shall be given in columns of GST, Freight, P&amp;F etc.</td>
</tr>
<tr>
<td>5. Only Lump sum prices shall be quoted for Mandatory spares in Bill of Quantity (BOQ) in CPP Portal. Price break up of Mandatory spares as per FACT’s TPS (for both Mechanical &amp; Instrumentation) shall be given on request by FACT.</td>
</tr>
<tr>
<td>6. As per bid, the design and supply of the refractory material may be in Vendor’s scope, as required. Any additional work involved in the erection of the same and any other work by FACT shall be estimated and the cost shall be loaded to the concerned bid during evaluation. The cost to be loaded shall be intimated to the bidder/s concerned before price bid opening.</td>
</tr>
<tr>
<td>7. Price Bids for 300 TPD and 150 TPD Amophos plants shall be evaluated separately.</td>
</tr>
<tr>
<td>8. The prices quoted in BOQ shall be all-inclusive except GST which shall be extra as applicable based on statutory notifications. Prices quoted for each Burner (supply, E&amp;C supervision and mandatory spares) shall be taken for evaluation separately with applicable items including P&amp;F, Freight, price loading etc.</td>
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**Date:**

**Seal**

**Bidder’s Signature with Name & Designation**

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TECHNICAL PROCUREMENT SPECIFICATION (TPS)

FOR

RLNG CONVERSION OF BURNERS

IN

COMBUSTION CHAMBER

OF

AMOPHOS PLANTS

AT

FACT UDYOGAMANDAL COMPLEX

KOCHI

INDIA

TPS No. UCTS/TPS/2020-01 R1

(Ref.-TPS No. UC-TS-TPS/2019-05/R0)
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### Technical Procurement Specification

**AMOPHOS PLANTS- RLNG Conversion of Burners in Combustion Chamber**

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<td>MANDATORY SPARES (INSTRUMENTATION)</td>
<td>25</td>
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<td>ENQUIRY</td>
<td>VKV</td>
<td>RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD</td>
<td>NAGESH</td>
</tr>
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<td>05/05/20</td>
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</table>
### TECHNICAL PROCUREMENT SPECIFICATION

#### AMOPHOS PLANTS - RLNG CONVERSION OF BURNERS IN COMBUSTION CHAMBER

<table>
<thead>
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<th>Date</th>
<th>Status</th>
<th>Prep’d</th>
<th>Checked</th>
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<td>VKV RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD</td>
<td>NAGESH</td>
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### ANNEXURES

<table>
<thead>
<tr>
<th>Annexure I</th>
<th>Drg. No 332-1-257R0 : Existing Refractory Arrangement of Combustion Chamber-300 TPD Amophos Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annexure II</td>
<td>Drg. No 4AP-1-52R0: Existing Refractory Arrangement of Combustion Chamber-150 TPD Amophos Plant</td>
</tr>
<tr>
<td>Annexure III</td>
<td>Drg. No 32352-11-PD-0003R3 P&amp;ID for Supply of Natural gas burner for Amophos Plants 300 TPD and 150 TPD</td>
</tr>
<tr>
<td>Annexure IV</td>
<td>Doc.No. UD-INST-AP-FM01. Details of RLNG Flow meters in 300 TPD and 150 TPD Amophos Plant</td>
</tr>
<tr>
<td>Annexure V</td>
<td>Drg. No 332-4-95R0: Schematic Arrangement of RLNG conversion of burner in 300/150 TPD Amophos Plant</td>
</tr>
<tr>
<td>Annexure VI</td>
<td>Specification of existing refractory bricks</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

The Fertilisers and Chemicals Travancore Ltd (FACT) is a Government of India Enterprise, engaged in the manufacture of Fertilizers, Chemicals & Petrochemical products, Engineering Consultancy and Fabrication. FACT-Udyogamandal Complex (FACT-UC) is a division of FACT located at Udyogamandal, Kochi, Kerala, India. FACT / CLIENT / OWNER Shall mean The Fertilizers And Chemicals Travancore Ltd., (Hereinafter called or referred to as ‘FACT’), a Company registered under the Indian Companies Act with Registered Office at Eloor, Udyogamandal, Kerala State, India.

VENDOR / BIDDER/ CONTRACTOR shall mean the person or organization responding to FACT's request for bid.

This Technical Procurement Specification (TPS) specifies the user requirements for the RLNG Fuel firing system for 300 TPD AMOPHOS plant and 150 TPD AMOPHOS plant – Udyogamandal Complex. Existing firing system used in both Amophos plants are Furnace Oil (FO) Fuel firing. Certain items, clauses, stipulations etc. by virtue of their importance may be repeated in the TPS / documents to avoid slippage under any circumstances. Metric system shall be normally adopted for the design and construction of the items unless otherwise specifically stated in the specifications.

Deviations if any from any of the clauses in this Technical Procurement Specification (TPS) / enclosures / codes referred in this Technical Procurement Specification etc. shall be clearly mentioned point wise with reasons for deviations by the Vendor in the Compliance Statement (Technical) in the enclosed format and to be submitted by the vendor along with the bid. However the offer shall be liable for rejection / consideration with loadings as applicable on account of deviations at the sole discretion of FACT. Hence, it is recommended that the deviations / clarifications shall be taken up with FACT as noted under clarifications / deviation requests by the bidder so that their Bid submitted is in total compliance to Bidding Document without any deviation/ stipulation/clarification.

1.1 CLARIFICATION/DEVIATION REQUESTS BY BIDDER

The details presented in this TPS have been compiled with all reasonable care. However, it is the Bidders responsibility to ensure that the information provided is adequate, clearly understood and it includes all documents.

<table>
<thead>
<tr>
<th>REV. NO.</th>
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<td>05/05/20</td>
<td>ENQUIRY</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bidder shall examine the TPS thoroughly in all respects and if any conflict, discrepancy, error or omission is observed, Bidder may request clarification/deviation up to 3 days prior to pre-bid meeting date or at least fifteen days before the last date of submission of bid in case the bidder is unable to attend the pre-bid meeting. Such Clarification/deviation requests shall be directed to the emails/contact details mentioned in the enquiry.

Response to queries/clarifications/deviations raised will be sent as expeditiously as possible in case such clarifications are considered to be given. The response shall not form part of Bidding Document unless issued as an Amendment/corrigendum. Any modification of the bidding document shall be issued as an Amendment/corrigendum at the discretion of FACT. The decision of FACT shall be final and binding under all circumstances.

Bidders are expected to resolve all their clarifications/queries to the Bidding Document and submit their Bid in total compliance to Bidding Document without any deviation/stipulation/clarification.

1.2 SITE DATA
Environmental, Topographical and Geographical features
Location: Udyogamandal, Eloor, Ernakulam, Kochi, Kerala.
Latitude: 10°04' North
Longitude: 76°18' East
Elevation: 4000 mm above MSL

Climatic Conditions: The temperature range is quite narrow and at a moderate level, rainfall is heavy but the location is on high ground with good drainage and is not water logged.

a. Ambient temperatures
   Absolute maximum atmospheric: 34.3°C.
   Absolute minimum atmospheric: 19.2°C.

b. Relative humidity:
   Maximum monthly average: 93%
   Minimum monthly average: 64%

c. Barometric pressure
   Maximum, millibar: 1016
### 1.3 BASIC REQUIREMENT

In view of the availability of RLNG (Re-gasified LNG) at Kochi, FACT proposes to replace the existing FO firing system with RLNG at its fertilizer manufacturing unit located at Udyogamandal, Eloor (FACT -UC) as follows:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLNG Fuel firing system for 300 TPD AMOPHOS plant</td>
<td>One no</td>
</tr>
<tr>
<td>RLNG Fuel firing system for 150 TPD AMOPHOS plant</td>
<td>One no</td>
</tr>
</tbody>
</table>

Normally RLNG fuel is proposed to use for the firing units for both 300 TPD and 150 TPD AMOPHOS plants-UC. However during instances of non-availability of RLNG or non-economics of RLNG usage in comparison with FO, we may have to use FO firing, hence an adopter plate/ facility for mount the existing FO firing system is also to be considered. However simultaneous firing of RLNG and FO is not envisaged in any of the above service and interruption of firing is permissible for switch over from RLNG fuel to FO fuel and vice versa. The firing units offered shall take care of the above requirements.

### 2.0 EQUIPMENT DESCRIPTION OF EXISTING UNIT

#### 2.1 300 TPD AMOPHOS PLANT AT FACT(UC)

The rotary dryer E6311 (old No.310) is employed for the drying of wet granular NP 20:20 material falling from the blunger, through blunger chute by gravity, having a moisture content ranging from 3.0 to 5.0%. The drying process reduces the moisture content to about 1.0% without decomposing the material. The granules are dried by **direct contact with hot gases co-currently**. Drying is aided by the lifting and distributing of flights as the material passes along the length of the dryer.

FO firing unit X6311 (old No 307), combustion air blower K6312 (old no 308) and combustion chamber F6311 (old No 309) consisting of:

a) Burner combustion chamber (Inner cylinder-Steel shell, refractory lined with water cooling arrangement) also called burner sleeve and

b) Hot gas chamber (Outer cylinder-Steel shell, refractory lined) which are provided to supply hot gases to the dryer.
The dilution air goes around the Burner combustion chamber (inner cylinder) and then mixes with the hot combustion gases in the burner combustion chamber. The temperature of the hot gases before entering the dryer is indicated by the temperature indicator alarm TIA6317.

The FO firing unit X6311 (307) consists of type 785 “Hauck” proportioning oil burner installed in the burner combustion chamber (inner cylinder) and consists of a FO burner with “sleeve bracket” mounting arrangement and induced air control sleeve, air valve, oil filter, oil valve, oil pressure regulator with pressure gauge and micro metering oil regulating valve, safety equipment and controls. FO is burned in the Hauck burner in a brick lined MS horizontal cylindrical chamber. The burner sleeve is provided with water cooling. FO is pumped to the burner by pump in the boiler plant @ 30-50 psig. Furnace Oil (FO) pressure is controlled at 15 psig pressure by pressure reducing valve which opens and bypasses excess FO back to the boiler plant. The FO line is steam jacketed and is provided with an oil filter, pressure gauge, oil preheater, pressure regulating valve and an oil cut off valve.

2.1.1 Operating Conditions of Existing FO firing unit X6311

(Note: The data noted is taken from the process manual of the OEM M/s DORR Oliver furnished more than 40 years back; hence some relevant / critical parameters pertinent for the vendor’s scope are measured at the present operating conditions and noted which may be followed for the new unit. However the operation philosophy remains same).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Supplying Heat for a rotary dryer, E6311 (old no: 310)</td>
</tr>
<tr>
<td>Service</td>
<td>Continuous, 24 Hrs. per day</td>
</tr>
<tr>
<td>Heat Release Rate</td>
<td>25,000,000 BTU/ Hr. (6,300,000 Kcal/Hr.) (6.3 Gcals/hr.) (As per data available) Heat release rate of the existing FO firing unit @ present full load conditions of the plant 5.555Gcals/ Hr.</td>
</tr>
<tr>
<td>Turndown ratio</td>
<td>7-1(As per data available)</td>
</tr>
<tr>
<td>Air &amp; Combustion gas</td>
<td>73500 CFM (2081 M³/Min) @ 328°C*. ( *Actual temperature of the gases exiting the hot gas chamber (outer cylinder) ranges from 700⁰C to 800⁰C).</td>
</tr>
<tr>
<td>Fuel</td>
<td>No 5 fuel oil</td>
</tr>
<tr>
<td>Heating value</td>
<td>18,300 BTU/ Lb.</td>
</tr>
<tr>
<td>Combustion air</td>
<td>74°F to 100°F at 100% RH</td>
</tr>
<tr>
<td>Draft available at combustion chamber outlet</td>
<td>0.3 in. Water (As per data available in the operating manual)</td>
</tr>
</tbody>
</table>
Measured combustion chamber outlet pressure @ current operating conditions: 5 to 6 mm WG.

2.1.2 Combustion air blower K6312

- Volume: 42.5 CUM/Min (Available data is suspected to have error)
- Temperature: Ambient.
- Static pressure: 0.0964 kg/CM²g. (Measured pressure @ current operating conditions: 980 mm WG.)
- Drive: Electric motor 15 HP @ 2800 rpm

2.1.3 Dryer Fan K6341 (old No 323)

- No of units: One
- Application: To carry flue gas, from combustion chamber thru drier to scrubber
- Material Handled: Flue gas containing water vapour, Ammonia and ammonium phosphate dust
- Temperature: 93°C.
- Density: 0.96 Kg/M³
- Flow rate: 1246 M³/Min
- Static pressure: 457.2 mm WG [Measured pressure @ current operating conditions: 340 mm WG].
- Type: Centrifugal-Radial blade
- Fan RPM: 1020
- Drive: Motor 260 HP @ 1470 rpm

The burner unit is installed at one end of the burner combustion chamber and is used to supply heat to the rotary drier. The burner fires FO and has a capacity to release heat at the specified heat rate noted. The actual/measured temperature of the gases exiting the combustion chamber ranges from 700°C to 800°C. The temperature of the gases can be varied by controlling the flow of combustion oil. A mechanically operated butterfly valve in the combustion air supply line is used to control air flow.

The combustion air is supplied by combustion air blower K6312 (old no 308); Hauck turbo blower 20H5-15M of capacity 1500 CFM driven by 15 HP electric motor. A part of the air which goes through the annular space around the FO pipe is used to atomise the FO and the balance goes through the outer annular space to the burner tip. The air supplied by this blower is sufficient for complete combustion of FO. A little more air
could be introduced into the combustion zone through the 12 holes provided in the burner combustion chamber.

In the dryer, the granules are dried by the hot combustion gases. During this drying, the moisture content reduces to < 1.0%. The temperature of the exit gases from the dryer is controlled @ around 95°C by temperature recording controller TIC-6318 by controlling the flow of combustion oil to the burner so that the material temperature does not rise above 80°C. Above 85°C, DAP of NP-20:20 will decompose.

The gases from the dryer containing ammonia and Ammonium phosphate dust is drawn by Dryer fan K6341 (old No 323) and sent to the scrubber wherein they are scrubbed with phosphoric acid in scrubber J6342 & C6342 (old No 326 A) to recover Ammonia and Ammonium phosphate and discharged thereafter to the stack. The dryer fan is of flow rate 47000 CFM @ static pressure of 16 " water. The dried material is discharged through a bar grizzly into a vibrating screen via a belt conveyor and a bucket elevator for screening the final product and recycling the balance material to the system.

2.2 150 TPD AMOPHOS PLANT AT FACT-UC

The operation of FO firing system in 150TPD Amophos is generally similar to 300 TPD Amophos plants hence not dealt in detail. Only the salient points are noted.

The rotary dryer is employed for drying of granular NP 20:20 materials having a moisture content ranging from 3.0 to 5.0%. The drying process reduces the moisture content to about 1.0% without decomposing the material. The granules are dried by direct contact with hot gases co-currently. Drying is aided by the lifting and distributing of flights as the material passes along the length of the dryer. The temperature of the gases exiting the hot gas chamber ranges from 400°C to 600°C at normal loads and ranges from 600°C to 700°C at higher loads. The temperature of the gases can be varied by controlling the flow of combustion oil. The dried material is discharged through a bar grizzly into a vibrating screen via a belt conveyor and a bucket elevator.

The burner unit is installed at one end of the combustion chamber and is used to supply heat to the rotary drier. Fuel oil is burned in a proportioning type “Wesman” shield drop oil burner in a brick lined MS horizontal cylindrical chamber. Fuel oil is pumped to the burner from a service tank by a rotary gear pump at 4.0 Kg/cm²g. Oil pressure to burner is controlled at about 2.5 Kg/cm²g by the pressure-regulating valve, which opens and bypasses the excess oil to the service tank. The fuel oil line is steam heated and is provided with an oil filter. Oil flow to the burner is controlled by a flow control valve.
by sensing the temperature at the drier outlet gas. A mechanically operated butterfly valve in the combustion air supply line is used to control airflow.

2.2.1 Details of the existing equipment and the burner for 150 TPD Amophos plant are tabulated below (Note: Same as 2.1.1)

<table>
<thead>
<tr>
<th><strong>Design data of FO Burner</strong></th>
<th>Wesman–schieldrop Self-proportioning oil burner size 7 having capacity of 13-65 gallons of fuel oil per hour at 28” WG air pressure with burner block, front plate, flexible oil pipe pressure reducing valve, oil pressure gauge. Automatic oil cut off valve to cut off oil in case of blower failure is also provided along with isolation valve.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel</strong></td>
<td>FO</td>
</tr>
<tr>
<td><strong>Rate (Min/Norm./Max.)</strong></td>
<td>150 / 250 / 350 Kg/hr.</td>
</tr>
<tr>
<td><strong>Gross Calorific Value (GCV)</strong></td>
<td>10,100 – 10,180 Kcal/kg</td>
</tr>
<tr>
<td><strong>Net Calorific Value (NCV)</strong></td>
<td>9600 – 9668 Kcal/kg</td>
</tr>
<tr>
<td><strong>Burner Heat release (Max.)</strong></td>
<td>3.535 Gcals/hr.</td>
</tr>
<tr>
<td><strong>Combustion air blower K 6412</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>To supply combustion air to burner in combustion chamber</td>
</tr>
<tr>
<td><strong>Nos.</strong></td>
<td>1 Running+1 Standby</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Centrifugal V belt driven</td>
</tr>
<tr>
<td><strong>Supplier</strong></td>
<td>Wesman Engineering Co Pvt. Ltd., Calcutta</td>
</tr>
<tr>
<td><strong>Drive motor</strong></td>
<td>25 HP, 1440 RPM</td>
</tr>
<tr>
<td><strong>Flow rate</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>2800 cfm (4800 m³/hr.) *4581m³/hr.@ current operating conditions</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>35 ºC</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>0.08 lb/ ft³</td>
</tr>
<tr>
<td><strong>Moisture</strong></td>
<td>100% RH</td>
</tr>
<tr>
<td><strong>Static Pressure</strong></td>
<td>28” WG * current operating conditions : 30”WG</td>
</tr>
<tr>
<td><strong>Combustion chamber F 6411</strong></td>
<td>Ref Drg. No 4AP-1-52 R0</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>To produce and supply Flue gas to drier</td>
</tr>
<tr>
<td><strong>Combustion air supply</strong></td>
<td>2800 cfm (4800 m³/hr.) @ 35°C</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>28” WG</td>
</tr>
</tbody>
</table>
FO supply Rate (Norm./Max) : 240 / 350 Kg/hr.
FO supply Temperature 85°C
Hot gas Chamber, (Outer Shell) with refractory lining Ref Drg.No.4AP-1-52 R0 enclosed
Burner combustion chamber- (inner shell) with refractory lining and water jacketing Ref Drg.No.4AP-1-52 R0 enclosed
Dilution air The required amount of dilution air is drawn through the annular space and then mixes with the hot combustion gases
Draft available : 0.3" WG (As per data available in the manual)
Measured hot gas chamber outlet pressure @ current operating conditions : 4 mm WG
Hot gas chamber Outlet Gas
Temperature : 500°F (Design); 600- 700 ºC (actual)
Volume : 63,000 m³/hr. (approx.) @ 500°F
Drier Fan K 6432
Nos & type One-Centrifugal
Application To carry flue gas, from drier to scrubber
Operating Temperature 93ºC (200ºF)
Flow rate 750 M³/min.
Static pressure 18” W.C. at 200ºF* current operating conditions : 13” WC
Drive Motor 150 H.P., 1440 RPM

3.0 SCOPE OF WORK FOR RLNG FUEL FIRING SYSTEM

The scope of work of the RLNG fuel firing system in 300 TPD AMOPHOS plant and 150 TPD AMOPHOS plant includes Design and Engineering, Supply, Inspection and Testing, supervision of Erection, Commissioning, Performance guarantee run, Documentation, Guarantee/ warranty etc. as follows:

i. Study of the existing system and firming-up of modifications required so as to enable firing of RLNG for the equipment listed. The modifications shall also ensure the safe and reliable operation of the equipments at the specified conditions during firing of RLNG.

ii. Design and detailed engineering of the modifications to be carried out and submission of drawings, data sheets, burner performance curves, design calculations, etc. for
review and approval by FACT/FEDO.
iii. Design and detailed engineering of the modifications (if required) to combustion chamber to be carried out and submission of drawings, data sheets etc. for review and approval by FACT/FEDO.
iv. Furnishing of relevant details regarding the temperature, gas ignition profile, specification of refractory to be use and other required parameters to enable FACT to check the suitability of the existing refractory lining provided in the hot gas chamber.
v. Supply of refractory in required quantity, if the refractory used by FACT is to be changed both in combustion chamber and hot gas chamber.

3.1 The vendor’s scope of supply for each RLNG fuel firing in 300 TPD AMOPHOS plant and 150 TPD AMOPHOS plant shall include but not limited to the following:

i. Design of Burner combustion chamber unit (inner cylinder) (if necessary) with RLNG burner, burner block/ burner sleeve in refractory, steel shell with water jacketing arrangement as required/applicable, air supply system comprising of wind box, volute etc. as applicable, mounting and other provisions for stable flame, guaranteed heat release, turndown etc. as required complete and submission of detailed drawing and data sheets for execution of modification work to combustion chamber through FACT.

ii. The new burner combustion chamber unit shall be designed without affecting the smooth and uninterrupted flow of dilution air in to the drying unit.

iii. Design of burner combustion chamber unit shall be such that, it can mount/fix suitably after removing the existing water jacketed combustion chamber. Ref Drg.No.332-1-257 R0 (300 TPD Amophos plant) and Drg.No. 4AP-1-52 R0 (150TPD Amophos plant) enclosed.

iv. If existing combustion chamber without modification can be used, unit with RLNG burner, burner block/ burner sleeve in refractory, mounting and other provisions for stable flame, guaranteed heat release, turndown etc. as required complete. Details and data sheet for the refractory works to be carried out in the existing combustion chamber suitable for the RLNG burning profile to be furnished by Vendor. If the specification of refractory to be used in the combustion chamber differ from existing brick spec, refractory should be supplied by the vendor for execution through FACT. Existing refractory details are attached as Annexure VI.

v. As detailed earlier, the new burner combustion chamber unit shall enable firing of RLNG. For enable the use of existing FO burner, an adopter plate/provision shall provide in the mounting plate. However simultaneous firing of RLNG and FO is not envisaged in any of the above service and interruption of firing is permissible for
switch over from RLNG fuel to FO fuel and vice versa.

vi. Pilot burner (RLNG) / igniting system (Pilot Gas Ignitor with flame feedback) for start-up of RLNG.

vii. Flame sensor unit(s) (Scanner(s)) complete for main gas burner. Flame detection unit for pilot gas burner.

viii. New Combustion Air blower with motor and accessories to supply combustion air to the burner combustion chamber unit. The supplied motors & its junction boxes etc. shall be of flame proof type suitable for Zone IIA/IIC. The new combustion air blower shall be sufficient for complete combustion of RLNG firing. Usage of preheated air for combustion is not envisaged. The existing Combustion Air blower with motor (1+1) used in FO firing need not be reused.

ix. Pneumatic/ motorized air flow control unit to be mounted at the inlet (inlet damper for flow control) or at discharge as required as per vendor’s design.

x. Combustion air flow piping / ducting, flexible joint, valves and controls, Air Flow meter, Pressure guage etc, other controls, interlocks and indications as applicable complete for the combustion air system to supply combustion air to the new burner combustion system.

xi. RLNG main gas valve train with piping, isolation valves, instrumentation and controls comprising of pneumatic gas pressure control valve (PCV) with bypass valve, pneumatic gas Temperature control valve (TCV) with positioner and open/ close limit switch with bypass valve, pneumatic gas safety shut off valves (Fail to close) with open and close limit switches (2 Nos. for each train), pneumatic gas safety shut off valve for vent (Fail to open) with open and close limit switches, pressure switch (Low), pressure transmitters, pressure indicators, other control, indication, safety and protection devices etc. complete.

xii. Existing RLNG Gas flow meter already installed in the gas line will have to be used by the vendor. Also feedback of gas flow meter will have to be taken by the vendor to BMS panel supplied by him. Details of existing RLNG flow meters are enclosed.

xiii. RLNG pilot gas valve train with piping, isolation valves, instrumentation and controls comprising of gas pressure reducing valve (PRV), pneumatic gas safety shut off valves (Fail to close) with open/ close limit switches (2 Nos. for each train), pneumatic gas safety shut off valve for vent (Fail to open) with open/ close limit switches, low pressure switch, pressure transmitters, pressure indicators, other control, indication, safety and protection devices etc. complete.

xiv. Please refer Tender purpose P&ID (Drg. No 32352-11-PD-0003R3) for supply of natural gas burner for 300 TPD and 150 TPD Amophos plant showing the RLNG main gas valve train and RLNG pilot gas valve train enclosed. The P&ID incorporating all necessary requirements shall be submitted along with the offer.

xv. Instrument airline components comprising of piping, isolation valves, regulators,
pressure gauges etc. complete as necessary

xvi. Flexible SS braided hoses comprising of main burner gas flexible hose, pilot burner gas flexible hose, and flexible instrument/atomising air hoses etc. to the extent necessary.

xvii. All piping items like pipes, fittings, flanges, valves, control valves, pipe supports etc. within vendor’s battery limit.

xviii. Supply of sight glass assembly with fixtures complete (for flame viewing) in the hot gas chamber.

xix. The RLNG, pilot, atomising and instrument airline trains shall be provided with necessary interconnecting piping and instrumentation and electrically connected with Flame proof junction box.

xx. All electronic instruments and panels shall be explosion proof Exd or purged type, suitable for the hazardous area classification (Zone 2, Gr. IIA/IIB,T3). The assembled valve train electronic equipments and others as applicable shall be wired to Flame proof junction box (JB).

xxi. Cables, cable tray, gland, ferrules etc. from field instruments to JB in the skid as required.

xxii. PLC based BMS panel complete. The PLC shall be able to communicate with FACT DCS (MODBUS TCP/IP) for data exchange. Additionally minimum status indications shall be made available as Digital/Analog signals for indication in existing DCS system.

xxiii. BMS PLC programming software along with a portable programmer (Laptop) shall be provided for NP300TPD. Separate programming software shall be provided in case if different BMS PLC is used in NP150TPD

xxiv. Inspection and testing as per standards/good Engineering practice.

xxv. Specification and data sheets for Refractory and insulation items in combustion chamber and hot gas chamber

xxvi. Other Electrical items, if any.

xxvii. Painting of items to be supplied by the vendor.

xxviii. Mandatory Spares

3.2 Vendor’s scope for supervision of Erection, Commissioning PERFORMANCE GUARANTEE ETC shall generally include but not limited to the following:-

i. Supervision of erection and hook up

ii. Pre-commissioning and Commissioning.

iii. Performance Guarantee run (Any instruments required for proving performance guarantee other than the instruments covered in the scope shall be in the scope of the vendor).
iv. Submission of drawings/documents as per Vendor Data Requirements
v. Commercial guarantee/ warranty
vi. Any other items covered in Scope of Work and other documents/drawings attached with the enquiry but not specifically mentioned above.
vii. The equipment and components are to be designed and shop fabricated in such a way that the site work is minimum.
viii. The erection work (by FACT) will be carried out side by side during normal running of plant. The fixing of new burner combustion chamber, refractory lining works in combustion chamber and hot gas chamber and hook up works necessitating plant stoppage shall be carried out during shut down of the plant in the minimum possible time not exceeding 21 days.

3.3 The following major items forming a part of combustion unit are to be reused:
(Ref Drg. No 332-1-257 R0 and Drg. No 4AP-1-52 R0 enclosed)

i. Existing Hot gas chamber (Outer cylinder)-Steel shell, refractory lined.
ii. Existing Combustion chamber, if there is no modification works in the combustion chamber suggested by the vendor
iii. Existing arrangement for providing dilution air as shown in the drawing
iv. RLNG flow meter(s) of FACT as available to be used

Note:
Replacement / repair of existing refractory lining of the combustion chamber and hot gas chamber as required shall be carried out by FACT with the refractory supplied by vendor/already available refractory brick with FACT. Relevant inputs regarding the specification of refractory suitable for the firing of RLNG and other required parameters in this regard are to be furnished by the vendor as noted earlier.

3.4 SPECIFICATIONS FOR RLNG FIRING SYSTEM

3.4.1 (A ) Operating Conditions

The RLNG fuel firing system shall be designed to cater to the following conditions:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Parameter</th>
<th>300 TPD Amophos Plant</th>
<th>150 TPD Amophos Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type of burner(RLNG)</td>
<td>RLNG</td>
<td>RLNG</td>
</tr>
<tr>
<td>2</td>
<td>No of burner(s)</td>
<td>One</td>
<td>One</td>
</tr>
<tr>
<td>3</td>
<td>Application</td>
<td>Supplying Heat for a rotary dryer</td>
<td>Supplying Heat for a rotary dryer</td>
</tr>
</tbody>
</table>

1 05/05/20 ENQUIRY
0 31/01/20 ENQUIRY VKV RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD NAGESH
REV. NO. DATE STATUS PREP’D CHECKED APPR’D
<p>| | | | |</p>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Service</td>
<td>Continuous, 24 Hrs. per day-Indoor</td>
<td>Continuous, 24 Hrs. per day-Indoor</td>
</tr>
<tr>
<td>5</td>
<td>Mounting</td>
<td>Horizontal</td>
<td>Horizontal</td>
</tr>
<tr>
<td>6</td>
<td>Location of burner (RLNG)</td>
<td>Burner Combustion Chamber</td>
<td>Burner Combustion Chamber</td>
</tr>
<tr>
<td>7</td>
<td>Main fuel (Normally) (Ref typical range and limiting composition given)</td>
<td>RLNG</td>
<td>RLNG</td>
</tr>
<tr>
<td>8</td>
<td>Start-up/ pilot gas (Normally)</td>
<td>RLNG</td>
<td>RLNG</td>
</tr>
<tr>
<td>9</td>
<td>Guaranteed RLNG Burner Heat release. (Ref Note 4)</td>
<td>5.555 Gcal/Hr.</td>
<td>3.535 Gcal/Hr.</td>
</tr>
<tr>
<td>10</td>
<td>Turn down (For RLNG)</td>
<td>100% down to 25% of Guaranteed heat release rate</td>
<td>100% down to 25% of Guaranteed heat release rate</td>
</tr>
<tr>
<td>11</td>
<td>Combustion chamber outlet draft</td>
<td>As per manual 0.3&quot; WG</td>
<td>Actual 5-6 mm WG 0.3&quot; WG</td>
</tr>
<tr>
<td>12</td>
<td>RLNG Pressure Min. / Norm. / Max.@ B/L</td>
<td>3.0 / 4.0 / 5.0 kg/cm² (g)</td>
<td>3.0 / 4.0 / 5.0 kg/cm² (g)</td>
</tr>
<tr>
<td>13</td>
<td>Supply RLNG gas pressure at B/L (for guaranteed heat release rate)</td>
<td>3.0 Kg/CM² g</td>
<td>3.0 Kg/CM² g</td>
</tr>
<tr>
<td>14</td>
<td>Fuel Rate @ guaranteed heat release NM³/Hr (RLNG)</td>
<td>Vendor to Specify</td>
<td>Vendor to Specify</td>
</tr>
<tr>
<td>15</td>
<td>Fuel Rate @ turn down (NM³/Hr) (RLNG)</td>
<td>Vendor to Specify</td>
<td>Vendor to Specify</td>
</tr>
<tr>
<td>16</td>
<td>Combustion air requirement NM³/Hr (RLNG)</td>
<td>Vendor to Specify</td>
<td>Vendor to Specify</td>
</tr>
</tbody>
</table>

3.4.1 (B) New Combustion air blower with motor (For RLNG)

<p>| | | | |</p>
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<thead>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Fan specifications</td>
<td>300 TPD Amophos Plant</td>
<td>150 TPD Amophos Plant</td>
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<tr>
<td>18</td>
<td>Type</td>
<td>Centrifugal</td>
<td>Centrifugal</td>
</tr>
<tr>
<td>19</td>
<td>Nos. required</td>
<td>1 No</td>
<td>1 No</td>
</tr>
<tr>
<td>20</td>
<td>Design Temperature/ RH</td>
<td>35 °C /100% RH</td>
<td>35 °C /100% RH</td>
</tr>
<tr>
<td>21</td>
<td>Drive (Direct/ V belt)</td>
<td>Vendor to Specify</td>
<td>Vendor to Specify</td>
</tr>
</tbody>
</table>
FACT UDYOOGAMANDAL COMPLEX

TECHNICAL PROCUREMENT SPECIFICATION

AMOPHOS PLANTS-
RLNG CONVERSION OF BURNERS IN COMBUSTION CHAMBER

FACT UDYOGAMANDAL COMPLEX

UCTS/TPS/2020-01 R1

PAGE 17 of 34

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Vendor to Specify</th>
<th>Vendor to Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Capacity control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Motor KW @ rpm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. If required, motor(s) for blower drive and motor/ electric actuator (if used) for flow regulation shall be flame proof as per safety requirements. However NFP (Non Flame Proof) motor(s) / electric actuators may be used with supporting justification as per relevant safety regulations which shall be mandatorily provided in case NFP motors / electric actuators are used.
2. Noise level values created shall in no case exceed 85db (A) at 1M.
3. For motor driven units, the rating (including any service factor) shall be a minimum of 110% of the greatest horsepower (including gear/ v belt/ coupling losses) required for any of the operating conditions.
4. Guaranteed burner heat release shall be based on LHV: Lower Heating Value of the fuel.

3.4.2 RLNG Specifications

Design Case for RLNG fuel

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Gas Composition Mole %</th>
<th>Design Gas</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>CH₄</td>
<td>97.49</td>
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<tr>
<td>2</td>
<td>C₂H₈</td>
<td>1.50</td>
</tr>
<tr>
<td>3</td>
<td>N₂</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>CO₂</td>
<td>0.01</td>
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<tr>
<td>5</td>
<td>Molecular Weight</td>
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<tr>
<td>6</td>
<td>LHV Kcal/ NM³</td>
<td>8569</td>
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<tr>
<td>7</td>
<td>H₂S Max mg/ NM³</td>
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</tr>
<tr>
<td>8</td>
<td>Merceptan Sulphur Max mg/ NM³</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>Total Sulphur Max mg/ NM³</td>
<td>30</td>
</tr>
</tbody>
</table>

3.5 CRITERIA FOR DESIGN/SELECTION OF RLNG FUEL FIRING SYSTEM

The guaranteed heat release and the turndown of the RLNG fired burners 300 TPD and 150 TPD Amophos plants in UC shall be as specified in the operating conditions dealt under the specifications of new fuel firing system for RLNG. The flame
profile/maximum flame dimensions (dia. x length) for RLNG and FO shall be such that impingement of the flame with the combustion chamber refractory lining, is avoided throughout the entire operating/ turndown range of the burner and the entire flame shall be contained within the combustion chamber. Also stable flame shall be obtained throughout the entire operating range.

4.0 CONTROL SYSTEM

Process requirement: The temperature of the exit gases from the dryer is to be controlled @ the set value of around 95°C by means of the existing temperature controller which controls the opening of Temperature Control Valve (TCV) to be installed the RLNG main gas train to regulate the quantity of RLNG admitted to the combustion chamber. The flow rate of RLNG to the burner shall be indicated by the RLNG flow meter.

This is to ensure that the Amophos product granules are dried by the hot combustion gases to reduce the moisture content to < 1.0% and to ensure that the product temperature is maintained below 85°C to prevent decomposition of Di-Ammonium Phosphate to mono ammonium phosphate.

i. The new firing units shall be provided with a local Control Panel (BMS Panel)
ii. The RLNG burner ignition type shall be automatic.
iii. The RLNG burner supply is to include a Burner Management System (BMS). The burner management system should include, but is not limited to, automatic control and trip actions to ensure safe and reliable start-up, operation and shut-down of the equipment. The burner interlock system shall receive a trip signal from the plant/DCS and furthermore the BMS shall send a trip signal to the plant/DCS in case the local burner interlock trip is activated. The PLC based BMS panel shall be able to communicate with FACT DCS.
iv. Cables, cable tray & ferruling from RLNG skid to JB within the skid will be in Vendor's scope. All other cables, cable tray ferruling from JB in the skid to local panel will be in FACT scope. Analog signals will be taken through 1sqmm, 20P multicore cable and Digital Inputs/Outputs will be taken through 1.5sqmm, 12P multicore cable.
v. Vendor shall specify all instrumentation and the trip system required for the safe and reliable operation.

5.0 INSULATION AND REFRACTORY LINING
Wherever required, the equipment and connected pipe lines shall be refractory lined/insulated taking in to consideration equipment / personnel protection, energy conservation etc. details may be clearly furnished by vendor to execute through FACT.

Specification and details of refractory lining/insulation including metal cladding for combustion chamber and hot gas chamber is to be furnished by Vendor.

6.0 TESTING & INSPECTION

FACT/FEDO or their representative shall have free access to the works of the vendor or his sub-contractors (if any) to carry out the inspection of all items covered under the scope of purchase. Vendor shall submit a detailed item-wise quality plan for review and approval by FACT/FEDO during the design / Engineering stage. Approval of work by FACT/FEDO shall in no way relieve the vendor of his responsibility in meeting all the provisions of the enquiry conditions.

7.0 PAINTING OF VENDOR SUPPLIED ITEMS

Painting of external surfaces of components supplied by the vendor is in the vendor’s scope

8.0 TRANSPORTATION

Transportation- as per PO condition.

9.0 ERECTION AND COMMISSIONING

Vendor shall submit the detailed procedure for erection and commissioning of each burner system and the schedule of activities in the form of a PERT Chart. As the erection part is under FACT’s scope, FACT may review the chart and finalise the chart incorporating FACT’s comments.

10.0 GENERAL

The erection of the Fuel firing system (except hook up as noted) is to be carried out while the plants are in operation. Hence, vendor shall strictly adhere to all relevant norms, practices and safety requirements of the company during supervision of execution of the job.
11.0 BATTERY LIMITS FOR RLNG AND UTILITIES

The following battery limits shall apply for each equipment and all necessary items/connections from and up to this limit shall be included in the vendor’s scope of work.

i. RLNG: At a distance within 8.0 meters from burner port @ the specified process conditions

ii. Instrument Air @ 3.5 Kg/CM² g: Single point at a distance within 8.0 meters from burner port

iii. Water: Single point at a distance within 8 Meters from burner port @ Pressure of 2.5 Kg/CM² g and 33 °C normal temperature.


The RLNG and utilities specified above shall be supplied at the Battery Limits.

12.0 SPARES

Essential spares required during commissioning shall be included in the scope of supply of the vendor.

Mandatory spares specified are to be quoted by the vendor (Ref attachment enclosed)

Special tools if any required for maintenance shall also be included in the Vendor’s scope.

The Price of mandatory spares, commissioning spares and special tools if any required for maintenance, shall be considered for evaluation.

13.0 SUB-VENDORS/SUB-CONTRACTORS

Refer clause 22 and 23 for the list of sub-vendors for Piping & Instrumentation items respectively, approved by the FACT/FEDO. Procurement of items from sub-vendors not included in the above mentioned list shall be subject to approval by FACT/FEDO.

For items not listed in the above documents, Vendor shall submit a list of sub-vendors with their credentials for the FACT/FEDO’s review & approval. For works to be carried out by sub-vendors, vendor shall obtain prior approval from FEDO/FACT regarding the scope of such works and the parties to whom such sub-contracting is proposed.

14.0 GUARANTEE

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>0</td>
<td>31/01/20</td>
<td>ENQUIRY</td>
</tr>
</tbody>
</table>

VKV RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD NAGESH

REV. NO. DATE STATUS PREP’D CHECKED APPR’D
The equipment and parts shall be guaranteed against defects in design, materials, workmanship and performance for a period stipulated in the commercial conditions of this enquiry.

### 15.0 PERFORMANCE GUARANTEE

Vendor shall guarantee that the RLNG fuel firing system supplied when operated in RLNG as specified in the operating conditions of new RLNG firing systems shall fulfil the following requirements:

i. Guarantee run shall be carried out for RLNG firing systems by the supplier.
ii. The specified heat release of the burner(s) shall be guaranteed for RLNG firing. Negative deviations are not acceptable on the specified heat release conditions.
iii. Duration of guarantee run shall be 3 hours minimum.
iv. Detailed procedure for performance guarantee run shall be furnished during the design / engineering stage and submitted to FACT for review/ approval. Performance guarantee run shall be carried out as per approved procedure.
v. In case the burner fails to achieve the specified heat release, vendor shall carryout necessary rectifications at his own cost to achieve the guaranteed figure. If the vendor fails to achieve the same even after the rectifications within a reasonable period or if in the opinion of FACT, the vendor is unable to do so or the repair/replacement cannot wait till the vendor is able to do it, FACT may either directly or through such other agencies as FACT may deem fit, get the defective part made good or carry out the repair/replacement, all at the risk and cost of the vendor.
vi. The flame profile/maximum flame dimensions (dia. x length) for RLNG shall be such that impingement of the flame with the burner combustion chamber / Hot gas chamber refractory lining, is avoided **throughout the entire operating/ turndown range of the burner** and the entire flame shall be contained within the chamber. Also stable flame shall be obtained throughout the entire operating range. In case of non-conformity, necessary rectifications shall be carried out by the vendor at his own cost and the specified conditions above shall apply.

### 16.0 VISIT TO SITE

It is strongly recommended that Vendor, shall visit the site and acquaint himself with the details of the equipment and site conditions and labour conditions prevailing in this area before submitting his offer.
17.0 OBLIGATIONS BY OWNER

Erection and related modification works required in the equipment suggested by vendor are to be carried out by FACT.

18.0 EXCLUSIONS

i. All foundations and other civil works are excluded from the scope of the Vendor. Wherever required, civil scope drawings with loading data and foundation details shall be furnished by vendor in advance.

ii. All modification works to combustion chamber as per details furnished by Vendor.

iii. All refractory lining in combustion chamber and hot gas chamber as per specification furnished by vendor. If the specification differs from the specification of existing refractory details furnished, refractory lining will be carried out by FACT using the material supplied by vendor. However as noted earlier the vendor shall furnish details and specification of refractory / insulation materials during the design / engineering stage to enable FACT to check the suitability and make arrangements for replace (if necessary) of the existing refractory lining.

iv. All works related to erection of RLNG burner, atomizing air, instrument air, Electrics and cooling water.

v. Cables, cable tray, ferrules etc. from FACT DCS/ plant to BMS panel in the plant.

vi. RLNG flow meter(s)

vii. Electric power supply to BMS panel as specified

viii. Starter(s) for combustion air blowers; however relevant details of the motors are to be provided to FACT during design / engineering stage.

ix. Supply of 415V 3-phase power at the motor terminals. However, vendor shall furnish all necessary details and specifications of the same during design / engineering stage.

x. Fixing of sight glass assembly supplied by the vendor as per drawings / details furnished by the vendor and under vendor’s supervision in the hot gas chamber for viewing the flame.

xi. Area lighting including providing 24V hand lamps inside the combustion chamber.

xii. Fire extinguishers (if required) and any special safety equipment like breathing apparatus as applicable.

19.0 VENDOR DATA REQUIREMENTS
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Group Code</th>
<th>Description</th>
<th>Qty. with offer</th>
<th>After Commitment</th>
<th>Qty. of final docs. (##)</th>
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<td>Qty. Lead time in weeks</td>
<td>Req'd Propd Agrd</td>
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<td>Equipment-wise description of the modifications required</td>
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<td>6P</td>
<td>4 4 4 6P+1S</td>
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<td>2</td>
<td>B</td>
<td>P&amp;I Diagram for each equipment</td>
<td>3P</td>
<td>6P</td>
<td>4 4 4 6P+1S</td>
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<tr>
<td>3</td>
<td>B</td>
<td>Burner Performance Curves (for each equipment)</td>
<td>3P</td>
<td>6P</td>
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<td>C</td>
<td>List of similar jobs executed by the Vendor</td>
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<tr>
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<td>B</td>
<td>Equipment schedule of execution in the form of Bar/PERT Chart</td>
<td>3P</td>
<td>6P</td>
<td>4 4 4 6P+1S</td>
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<td>6</td>
<td>A</td>
<td>Responsibility Matrix</td>
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<td>7</td>
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<td>Quality Assurance Plan</td>
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<td>B</td>
<td>Dimensioned General Arrangement Drawings with BOM</td>
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<td>9</td>
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<td>Piping General Arrangement</td>
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<td>List of spares</td>
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20.0 MANDATORY SPARES (MECHANICAL)

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<th>Unit Price</th>
<th>GST</th>
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<tr>
<td>1</td>
<td>Burner Tip (RLNG)</td>
<td>ONE no.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bearings for combustion air blower</td>
<td>One Set</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Balanced rotor assembly for combustion air blower</td>
<td>One No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td><strong>150 TPD Amophos Plant</strong></td>
<td></td>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Bearings for combustion air blower</td>
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<td></td>
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</tr>
<tr>
<td>3</td>
<td>Balanced rotor assembly for combustion air blower</td>
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</tr>
</tbody>
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**Note:**

1. The list of spares noted above is **mandatory** for each firing unit and shall be considered for evaluation.
### 21.0 MANDATORY SPARES (INSTRUMENTATION)

<table>
<thead>
<tr>
<th>Sl No</th>
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<th>Quantity</th>
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<tr>
<td>1</td>
<td>Spare Gas Shut Off Valve &amp; Spare Pilot Gas Shut Off Valve</td>
<td>1 No each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Relay / Relay board</td>
<td>1 No each type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SOV</td>
<td>2 Nos each type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>BMS PLC</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>DI/DO/CPU Card</td>
<td>1 No each</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Supply Unit</td>
<td>1 No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flame Scanner</td>
<td>1 No.(Full Unit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pilot gas Ignitor with flame feedback</td>
<td>1 No. (Full Unit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>150 TPD AMOPHOS PLANT</td>
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<tr>
<td>1</td>
<td>Spare Gas Shut Off Valve &amp; Pilot Gas Shut Off Valve</td>
<td>1 No each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Relay / Relay board</td>
<td>1 No each type</td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>SOV</td>
<td>2 Nos each type</td>
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<tr>
<td>4</td>
<td>BMS PLC</td>
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<td>DI/DO/CPU Card</td>
<td>1 No. each</td>
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<tr>
<td></td>
<td>Power Supply Unit</td>
<td>1 No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flame Scanner</td>
<td>1 No.(Full Unit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pilot gas Ignitor with flame feedback</td>
<td>1 No.(Full Unit)</td>
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</table>

Note: The list of spares indicated above is mandatory.

### 22.0 SUB-VENDOR LIST (PIPING)

| 1 | 05/05/20 | ENQUIRY | \_ | \_ |
| 0 | 31/01/20 | ENQUIRY | VKV | RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD / NAGESH |
| REV. NO. | DATE | STATUS | PREP’D | CHECKED | APPR’D |
1.0 GASKETS

(i) GASKET METALLIC

a) IGP Engineers Pvt. Limited, India  
b) Madras Industrial Products, India  
c) Starflex Sealing India Pvt Ltd, India  
d) Teekay Metaflex Pvt Ltd, India  
e) Unique Industrial Packing, India

(ii) GASKET CAF

a) Champion Jointing Ltd, India  
b) IGP Engineers Pvt. Limited, India  
c) Madras Industrial Products, India  
d) Starflex Sealing India Pvt Ltd, India  
e) Unique Industrial Packing, India

FLANGES

2.0

a) Abasi Engineering Works, India  
b) Britex Engineering Works, India  
c) CD Engineering Co., India  
d) CD Industries (Ghaziabad), India  
e) Chaudhry HammerWorks Ltd, India  
f) Golden Iron & Steel Works, India  
g) J K Forging, India  
h) JAV Forgings (P)Ltd, India  
i) M.S. Fitting (P)Ltd, India  
j) Metal Forging Pvt Ltd, India  
k) Punjab Steel Works (THE), India

3.0 COMBUSTION AIR BLOWER

a) ABB ALVI  
b) FLAKT (INDIA) LTD  
c) THERMAX LTD  
d) TLT ENG INDIA(P) LTD  
e) AIR CONTROL & CHEMICAL ENG CO LTD  
f) ANDREW YULE & CO LTD
23.0 SUB-VENDOR LIST (INSTRUMENTATION & ELECTRICAL)

A. PRESSURE & DIFFERENTIAL PRESSURE GAUGES
   b. Waree Instruments Ltd.
   c. General Instruments Consortium
   d. Wika instruments (I) Pvt. Ltd.
   e. Odin (I) Pvt. Ltd.
   f. Manometer (India) Pvt. Ltd, Bombay

B. PRESSURE SWITCHES
   a. Switzer Instrument Ltd.
   b. Indfos Industries Ltd.
   c. Danfoss

C. ELECTRONIC TRANSMITTERS (PRESSURE & TEMPERATURE) – SMART TYPE
   a. Siemens Ltd
   b. Yokogawa India Ltd.
   c. Emerson Process Management (India) Pvt. Ltd.
   d. ABB Ltd.
   e. Honeywell Automation India Ltd

D. TEMPERATURE GAUGES
   a. H. Guru Instruments (SI) P Ltd.
b. General instruments Consortium  
c. A.N Instruments  
d. Pyro Electric Instruments Goa Pvt. Ltd  
e. Waree Instruments Ltd  

E. RELAYS AND TIMERS  
   a. Omron  
   b. Honeywell Automation India Ltd.  
   c. OEN India Ltd.  

F. CABLES  
   a. Delton Cables Ltd  
   b. Brooks cable Works Ltd  
   c. KEI Industries Ltd  
   d. General Instruments Consortium  
   e. Universal Cables Ltd  
   f. Toshniwal Cables  
   g. Associated Cables Pvt. Ltd, Mumbai  

G. JUNCTION BOXES &PUSH BUTTON STATIONS (EX PROOF & WP)  
   a. Baliga Lighting Equipment Pvt Ltd  
   b. Flexpro Electricals Pvt Ltd  
   c. Flame Proof Equipments Pvt Ltd  
   d. Alstom T & D India Ltd  
   e. Ex-Protecta  
   f. Crompton Greaves Ltd  

H. FLAME SENSORS/SCANNERS  
   a. Honeywell Automation Ltd  
   b. Durag  
   c. Fireye  
   d. ABB Ltd.  

I. PILOT BURNER/IGNITOR  
   a. Fireye  
   b. Durag  
   c. Air Oil Flare Gas  
   d. Forney  
   e. Lamtec

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<td>RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD</td>
</tr>
</tbody>
</table>

REV. NO. DATE STATUS PREP’D CHECKED APPR’D
J. LIMIT SWITCHES/ PROXIMITY SWITCHES  
   a. Honeywell Automation India Ltd.  
   b. Pepperl + Fuchs India Pvt. Ltd.  
   c. ABB Ltd.

K. CONTROL VALVES  
   a. MIL Controls Ltd.  
   b. Instrumentation Ltd.  
   c. Flowserve India Controls (P) Ltd.  
   e. Emerson Process Management Chennai Ltd.  
   f. Dembla Valves (P) Ltd.  
   g. Dresser valve India Pvt. Ltd.

L. SOLENOID VALVE  
   a. ASCO Numatics (INDIA) Pvt. Ltd.  
   b. Emerson.

M. ON-OFF VALVE – SOLENOID OPERATED  
   a. Instrumentation Ltd.  
   b. MIL Controls Ltd.  
   c. Emerson Process Management Chennai Ltd.  
   d. Dresser valve India Pvt. Ltd.  
   e. Flowserve India Controls (P) Ltd.  
   f. Koso India Private Ltd.  
   g. Virgo Valves & Controls Private Ltd.  
   h. Tyco Valves & Controls (I) P Ltd.  
   i. ARCA Controls Ltd.

N. SELF ACTUATED PRESSURE CONTROL VALVES  
   a. Dresser valve India Pvt. Ltd.  
   b. Emerson Process Management Chennai Ltd.  
   c. Nirmal Industrial Control Pvt. Ltd.  
   d. Samson Controls Pvt. Ltd.

O. PLC  
   a. Rockwell (ALLEN BRADLEY)  
   b. Siemens Ltd.
<table>
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<th>REV. NO.</th>
<th>DATE</th>
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<td>VKV</td>
<td>RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD</td>
<td>NAGESH</td>
</tr>
</tbody>
</table>

- c. Honeywell Automation India Ltd.
- d. Schneider Electric Systems India
- e. Omron.
- f. ABB Ltd.

P. MOTORS

- g. Siemens
- h. ABB
- i. Kirloskar
- j. Jyothi
- k. BBL
- l. BHEL
## PROJECT

RLNG Fuel firing system with arrangement for 300 TPD AMOPHOS plant and 150 TPD AMOPHOS plant - UC.

### ENQUIRY NO.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty</th>
<th>Unit Price</th>
<th>Total Price</th>
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<tr>
<td>1.0</td>
<td>RLNG firing system for 300 TPD Amophos Plant</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.1</td>
<td>Supply portion of RLNG burner system : Design, Testing inspection and Supply of LNG Fuel firing system as per Technical Procurement Specification (TPS) including supply of burner block, adapter plate/ arrangement for existing FO burner mounting etc, new blower with motor and accessories , drawings for the modification works of existing burner combustion chamber(as required), refractory lining materials (all layers ) for burner combustion chamber ( as required ) and hot gas chamber( as required)</td>
<td>1 Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Supply of Mandatory Spares as per list attached in Technical Procurement Specification (TPS)</td>
<td>1 Lot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Supervision of Erection &amp;Commissioning of RLNG firing unit: Supervision of erection &amp; hook up to the existing unit, Commissioning, documentation, and carrying out successful performance testing etc. of RLNG Fuel firing system as per Technical Procurement Specification (TPS)</td>
<td>1 Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>RLNG firing system for 150 TPD Amophos Plant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Supply portion of RLNG burner system : Design, Testing, Inspection and Supply of LNG Fuel firing system as per Technical Procurement Specification (TPS) including supply of burner block, adapter</td>
<td>1 unit</td>
<td></td>
<td></td>
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### ENQUIRY

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<td>VKV</td>
<td>RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD</td>
<td>NAGESH</td>
</tr>
<tr>
<td>TECHNICAL PROCUREMENT SPECIFICATION</td>
<td>AMOPHOS PLANTS-RLNG CONVERSION OF BURNERS IN COMBUSTION CHAMBER</td>
<td>PAGE 32 of 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>plate/ arrangement for existing FO burner mounting etc, new blower with motor and accessories and drawings for the modification works of existing burner combustion chamber (as required), refractory lining materials (all layers) for burner combustion chamber (as required) and hot gas chamber (if required)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.2 Supply of Mandatory Spares as per list attached in Technical Procurement Specification (TPS))</td>
<td>1 lot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 Supervision of Erection &amp; Commissioning of RLNG firing unit: Supervision of erection &amp; hook up to the existing unit, Commissioning, documentation, and carrying out successful performance testing etc. of RLNG Fuel firing system as per Technical Procurement Specification (TPS).</td>
<td>1 unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Price (INR) for firing system (RLNG) for 150 TPD Amophos plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. The total Amount shall include all items and works required for the complete system as per scope & TPS.
2. The total system shall be supplied with all accessories, certificates and documents as required and the cost shall be included in the price quoted.
3. Bidder to fill all the columns for each item separately in the above format. Bids not conforming to this requirement are liable to be rejected.
4. Price Bids for 300 TPD and 150 TPD Amophos plants shall be evaluated separately.
5. As per bid, the design and supply of the refractory material may be in Vendor’s scope, as required. Any additional work involved in the erection of the same and any other work by FACT shall be estimated and the cost shall be loaded to the concerned bid during evaluation. The cost to be loaded shall be intimated to the bidder/s concerned before price bid opening.
ENQUIRY No:

We state that Our Offer No :………………………………………… is in full compliance with the documents issued against the Enquiry No :………………….. except for the deviations listed below:-

**LIST OF DEVIATIONS / EXEMPTIONS**

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Reasons for Deviation</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Name of Bidder:

We have read, understood and accepted the terms and conditions of this enquiry covered in Technical Procurement Specifications, for Supply, for supervision of Installation and hook up with existing equipment & Commissioning and guarantee run etc.

Date:                                        Name of Vendor                                       Seal & Signature

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REV. NO. | DATE | STATUS | PREP’D | CHECKED | APPR’D
----------|------|--------|--------|---------|--------

## 26.0 CHECK LIST

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<tr>
<th>Sl.no</th>
<th>Clause no</th>
<th>Details</th>
<th>Considered</th>
<th>Not considered</th>
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<tr>
<td>1</td>
<td>3.1 i</td>
<td>Any modifications in burner combustion chamber</td>
<td>150TPD</td>
<td>300TPD</td>
</tr>
<tr>
<td>2</td>
<td>3.0 iv &amp; 3.1 iv</td>
<td>Specification of refractory attached</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>3</td>
<td>3.1 v</td>
<td>Facility for mounting the existing FO burner</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>4</td>
<td>3.1 vi</td>
<td>Pilot burner for start up</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>5</td>
<td>3.1 vii</td>
<td>Flame sensor units</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>6</td>
<td>3.1 viii</td>
<td>New combustion air blower</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>7</td>
<td>3.1 x</td>
<td>Combustion air flow piping</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>8</td>
<td>3.1 xi</td>
<td>RLNG main gas valve train</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>9</td>
<td>3.1 xiii</td>
<td>RLNG pilot gas valve train</td>
<td>150TPD</td>
<td>300TPD</td>
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<td>10</td>
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<td>P &amp; I D for main and pilot gas valve train</td>
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<td>300TPD</td>
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<td>Instrument air line piping</td>
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<td>12</td>
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<td>Flexible SS braided hoses</td>
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<td>Sight glass assembly</td>
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<td>14</td>
<td>3.2 i</td>
<td>Supervision of erection &amp; hook up</td>
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<td>16</td>
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<td>Compliance statement filled</td>
<td>150TPD</td>
<td>300TPD</td>
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### Remarks

**Date:** 05/05/20

**Status:** ENQUIRY

**Prepared by:** VKV

**Checked by:** RAJESH / NIBU / RAJU / RAJAGOPAL / HAROLD

**Approved by:** NAGESH
A. RLNG Flowmeter 150 TPD NP Plant
   1. Type : Coriolis Type Mass Flow Meter
   2. Make : Endress+ Hauser
   3. Model no. : Promass 80F40-5TU7/0
   4. Size & End connection : 1.5" 150# ANSI RF
   5. FF distance : 550mm

B. RLNG Flowmeter 300 TPD NP Plant
   1. Type : Coriolis Type Mass Flow Meter
   2. Make : Endress+ Hauser
   3. Model no. : Promass 80F25-7FD0/0
   4. Size & End connection : 1" 150# ANSI RF
   5. FF distance : 440mm
### DETAILS OF BRICKS USING IN 300 TPD & 150 TPD FURNACES

**Combustion chamber**

**Burner Sleeve**

Layer 1 – Insulation bricks (Arch bricks) OR Fire bricks (Arch bricks)

Layer 2 - Fire bricks (Arch bricks)

**Hot Gas chamber**

Layer 1 – Insulation bricks – Straight & Arch bricks

Layer 2 – Fire bricks – Straight & Arch bricks

**Specification of Fire Bricks**

1. Al₂O₃ : 60% (min)
2. SiO₂ : 35 - 40%.
3. Fe₂O₃ : 2% (max)
4. Apparent porosity : 22 - 23%.
5. Bulk density : 2.2 - 2.4gm/cc.
6. Cold crushing strength: 400 kg/cm².
7. Temperature : 1250 Deg.C (max)
8. Dimensional Tolerance : +/- 2%.

**Specification of Insulation bricks**

Insulation Bricks as Per IS:2042, Type 2 or Grade B
STANDARD TERMS AND CONDITIONS OF PURCHASE

1. DEFINITIONS

1.1 The following expressions used in these Terms and Conditions/Purchase Orders shall have the meanings indicated against each of these, unless repugnant to the context and meaning thereof.

1.2 FACT/COMPANY/PURCHASER means The Fertilizers and Chemicals Travancore Limited; a company registered under Indian Companies Act with registered office at Eloor, Udyogamandal, Kerala State, India and the term includes its Divisions as applicable.

1.3 SELLER/SUPPLIER/VENDOR/CONTRACT OR/MANUFACTURER means the person or company, with whom ORDER is placed by FACT for supply of equipment, materials, stores and/or services.

1.4 ORDER means the Purchase ORDER or Work ORDER and all of its Annexures /Attachments (including this Attachment) and documents referred therein together with any subsequent modifications thereto.

1.5 ITEM (S) means the MATERIALS (S)/EQUIPMENT (S)/ SPARE PART (S) to be supplied by the SELLER as per the ORDER.

2. ACCEPTANCE

Seller shall acknowledge receipt of ORDER within 15 days of the date of its issue by returning a copy of the ORDER duly signed by an authorized person in confirmation that Seller accepts the ORDER and is proceeding accordingly. If acknowledgement is not received within 15 days, it will be deemed that the ORDER is accepted in TOTO.

3. SECURITY DEPOSIT

The Seller shall, within 15 days of receipt of order, furnish towards security for faithful performance of ORDER a cash deposit or a Bank Guarantee for a value equal to 5% of the ORDER Value in the Proforma attached. Any delay in activities of FACT due to non-submission of the Acceptance copy of ORDER or Security Deposit by Seller, shall not constitute reasons for extension to Seller’s Delivery Promise or waiver of liquidated damages for late delivery. Such Security Deposit shall not be required for ORDERS with price up to INR 5,00,000/- (Rupees Five Lakh only). Security Deposit shall be kept valid until Seller discharges all his/her obligations under ORDER except warranty obligations under the relevant clause of the order.

4. SCOPE OF ORDER

4.1 The items described in the ORDER are to be supplied according to the data sheets, tables, specifications and drawings attached thereto and/or enclosed with the ORDER itself and according to all conditions both general and specific, attached with the ORDER, unless any of them has been modified or cancelled in writing by FACT either as a whole or in part.

4.2 Any apparent omission or error in the specifications shall be met by the Seller if such omitted portion is necessary for the functioning of the item. The Seller, prior to proceeding with the work under ORDER, shall call to the attention of FACT, any such omission or error or ambiguity in the specifications requiring clarification.

5. PRICES

5.1 Unless otherwise agreed to specifically in ORDER, the Price shall remain firm throughout the period of order, including extended periods, if any, and shall not be subject to any escalation on any account.

5.2 In the case of overseas supplies, Shipping Terms referred to shall be governed by the definitions of latest INCOTERMS unless otherwise specified in the ORDER.

6. TAXES, DUTIES & LEVIES

6.1 All Central, State or Municipal taxes, duties and levies payable on the item/s are deemed to be included in the Price unless otherwise specified. In case the rates of these levies are increased by the Government or any new Tax/Duty/Levy becomes legally payable during the delivery period stipulated in the ORDER, the extra cost so incurred shall be paid by FACT. The benefit of any reduction in respect of these levies shall be passed on to FACT. If the delivery is delayed beyond the time stipulated in the ORDER and the above rates go up or new levies imposed, during this period of delay, the extra costs so incurred shall be borne by the Seller. Claim for variations in the levies shall be supported by documentary evidence and proof of payment.

6.2 In the case of overseas supplies, the Seller shall make payment of all taxes, duties and levies chargeable to the export of items in the country of origin and port of shipment/gateway airport.

7. BANK GUARANTEES

All Bank Guarantees required as per the ORDER shall be issued / confirmed by a nationalized/scheduled Indian bank. If the bank guarantee is issued by a bank outside India, a counter guarantee as per our format from an Indian nationalized/scheduled bank in India shall also be furnished.

8. DELIVERY

8.1 Equipment/item/s ordered shall be dispatched completely assembled and shall require no assembly at FACT site, unless specified otherwise.

8.2 Delivery shall be deemed to be completed on the date shown on the lorry receipt, railway receipt, Bill of Lading or Airway Bill in case of delivery ex-works/FOR/FOB/FAS despatch station /
9. DELAY IN DELIVERY/LIQUIDATED DAMAGES

9.1 Time is the essence of this contract and the delivery period mentioned in this ORDER shall be strictly adhered to.

9.2 If SELLER fails to deliver the equipment and materials covered under ORDER within the delivery time stipulated therein, liquidated damages at the rate of half of one percent (0.5%) of the total Price of ORDER / value of the items which are delayed per week or part thereof subject to a maximum of seven and one half percent (7.5%) of the total price of the ORDER shall be payable by SELLER. Such liquidated damages shall be deducted from Seller's invoices and/or any other payments due to the SELLER. This is without prejudice to Art.11.0.0 below.

9.3 Even if supplies are made on time, but Installation & Commissioning gets delayed due to reasons attributable to vendor, then Liquidated Damages (as per relevant clauses of Terms and Conditions of Purchase and Terms and Conditions of Erection & Commissioning) will be applicable for the total order value shown in ORDERS. Also, if supplies get delayed but Erection & Commissioning activity is completed in time and within the total delivery schedule stipulated for supply and erection & commissioning, then Liquidated Damages shall not be applicable.

10. PERFORMANCE WARRANTY

10.1 The equipment /spare parts /materials supplied shall be brand new and the Seller shall guarantee that all items shall perform in accordance with the specifications and to be free of all defects in design, material and workmanship. Should any item not perform as intended or should the design, material or workmanship prove defective within a period of twelve (12) months from the date of putting the item into operation or eighteen (18) months from the date of dispatch, whichever is earlier, and the Seller shall be notified thereof, the Seller shall promptly, at his own expense, correct the deficiency so that the item performs in accordance with ORDER specifications. If the Seller fails to take proper corrective action to repair or replace the item within a reasonable time (as decided by FACT) of FACT's notice, FACT shall be free to take such corrective action at the Seller's risk and cost.

10.2 In the event of any rectification / replacement, the warranty shall be extended to cover a period of twelve months in operation from the date of such rectification / replacement.

10.3 Spare parts supplied shall be perfectly interchangeable with those originally installed in the equipment. Since the interchangeability can normally be checked by FACT only at the time when the spares are used, the Seller shall guarantee the interchangeability without time limit, provided that no modifications have been carried out to the equipment or the spare part without the Seller's prior written permission.

10.4 Even if relevant drawings are approved and/or the item(s) is/are cleared during pre-despatch inspection by FACT, the Seller is not absolved of his responsibility to ensure that the items supplied comply strictly with requirements of the ORDER and FACT shall be free to point out any defect till the warranty period is over.

11. DEFAULT

11.1 In the event of any default by Seller to comply with any of the provisions or requirements of the ORDER, FACT shall have the right to terminate / cancel the ORDER with or without notice and without prejudice to any other rights, options, or remedies FACT may have. In the event of such termination /cancellation of the ORDER, FACT shall be entitled to arrange for the procurement of items from alternative suppliers at the risk and cost of the Seller. The waiver of one default shall not be considered as an automatic waiver of any other default.

11.2 Any failure by FACT at any time or from time to time to enforce or require strict observance and performance of any of the terms of the ORDER or to exercise any rights herein shall not constitute a waiver of such terms and conditions or rights and shall not affect or impair same or the rights any time to avail of the same.

12. SUSPENSION AND TERMINATION

12.1 FACT reserves the right to suspend the ORDER in whole or in part by written notice to Seller at any time prior to despatch of item/s by Seller. On receipt of notice of suspension from FACT, Seller shall immediately stop all activities related to ORDER. On receipt of notice removing the suspension Seller shall re-commence the execution of the ORDER and complete it as per the terms of the ORDER, provided that the delivery period specified in ORDER shall be extended corresponding to the period of suspension including reasonable remobilisation period. If period of suspension exceeds six (6) months, ORDER shall be deemed to have been terminated under Clause 12.2 below unless otherwise agreed to.

12.2 Reasonable termination expenses in connection with termination of ORDER shall be as mutually agreed.

12.3 However, the above Clauses 12.1 and 12.2 shall not be applicable in case of termination by FACT due to default by Seller.

13. EXPEDITING

When deemed necessary by FACT, this ORDER shall be subject to physical expediting by representatives of FACT or of agents nominated for the purpose, who shall be granted access to any and all parts of Seller's or Seller's sub-suppliers; plants involved in manufacture of items covered by ORDER. Expediting performed...
by such representative/agent shall in no way relieve the Seller of delivery obligations under the terms of ORDER.

14. OFFICIAL INSTITUTION TESTING
Seller shall ensure the prompt execution of all approval steps and/or tests made by official institutions, if required in connection with equipment and materials covered under ORDER and the installation thereof. Seller shall be held responsible for any delay in the approval or testing phase as well as for any delay in the submission of necessary certificates. Delay on the part of the above institution will not be considered a reason for extension of delivery period. All expenses related to such official testing shall be to Seller's account.

15. INSPECTION
15.1 Items supplied shall be subject to inspection and testing as per Codes, Standards and Procedures that are required to ensure quality of material / item/s as specified in the ORDER. Seller shall arrange such inspection in Seller's shop. Any and all expenses incurred in connection with test, with preparation of reports and with analysis issued by qualified laboratories shall be to Seller's account.

15.2 If pre-despatch inspection is specified in the ORDER, representative of FACT shall be granted access to any and all parts of Seller’s / sub-supplier’s plant(s). Seller shall notify FACT at least 15 working days in advance of the Scheduled date of inspection. Even if the item is cleared during pre-despatch inspection, the Seller is not absolved of his responsibility to ensure that the items supplied comply strictly with requirements of the ORDER.

15.3 Inspection waiver if granted shall not absolve the Seller of his responsibility to ensure that the items supplied comply strictly with requirements of the ORDER and shall not in any way impair FACT's right to reject non-conforming items or to avail of any remedies to which FACT is entitled.

15.4 Notwithstanding any inspection that may have been done at the Seller's site, final acceptance of items is subject to inspection at FACT site.

16. PATENT INDEMNITY
Seller hereby warrants that the use or sale of the items delivered under the ORDER does not infringe claims of any patent covering such items (to the extent the design for such items is not furnished by FACT) and the Seller agrees to be responsible for and to defend at its sole expense all suits and proceedings against FACT based on any such alleged patent infringement and to pay all costs, expenses on judgement and damages which FACT may have to pay or incur by reason of any such suit or proceedings and to secure the rights for FACT for the continued use of equipment.

17. INDEMNIFICATION
The Seller hereby indemnifies and hold FACT harmless from all claims, losses, demands, causes of action or suits arising out of the services, labour, equipment and materials furnished by Seller under ORDER.

18. FORCE MAJEURE
18.1 Neither the PURCHASER nor the SELLER hereto shall be held responsible for any delay or failure to perform any or all the obligations under ORDER caused by Force Majeure. In such a case the time for performance or such obligations and the obligations of the other party to the extent that they are affected by such occurrence will be extended by such period as is duly justified. Notification of a circumstance of Force Majeure shall be given by fax/e-mail addressed to the other party within five (5) working days of its occurrence. This notice of Force Majeure shall be confirmed by a Registered letter despatched within one (1) week, along with appropriate documentary evidence confirming the existence of a situation of Force Majeure.

18.2 For the purposes of this clause, Force Majeure means

18.2.1 War or hostilities
18.2.2 Riot or civil commotion
18.2.3 Earthquake, flood, tempest, lightning or other natural calamities, epidemics
18.2.4 Accident, fire or explosion not caused by willful negligence of Seller
18.2.5 Labour strikes or lockout exceeding ten (10) days in duration not caused by any deliberate act or indiscretion by Seller.
18.2.6 Law and Order Proclamation
18.3 However, should such a delay, even if due to reason of Force Majeure be protracted for more than three (3) months, FACT shall have the right to cancel ORDER at no charge to FACT and FACT shall be entitled to the reimbursement of any amount already paid to the Seller.

19. SUBLETTING /ASSIGNMENT
SUB-LETTING or assignment of whole or part of the order shall not be permitted except with the prior approval of FACT obtained in writing.

20. APPLICABLE LAW AND SETTLEMENT OF DISPUTES
20.1 This ORDER shall be subject to and shall in all respects be governed by Indian Law.
20.2 Except in the cases referred to in the Clause 20.3 below, if any dispute arises out of or relating to or in connection with this contract, between the Contractor and the Owner / FACT, the same shall be amicably settled through mutual discussions, failing which, the unresolved dispute(s) shall be referred to arbitration in accordance with the provisions of the Arbitration and Conciliation Act,
1996, as amended from time to time and number of Arbitrator shall be one. The venue of the Arbitration shall be at Ernakulam and proceedings shall be in English.

20.3 In the event of any dispute or difference relating to the interpretation and application of the provisions of this contract(s) between Central Public Sector Enterprises (CPSEs) / Port Trusts inter-se and also between CPSEs and Government Departments / Organizations (excluding disputes concerning taxation), such dispute / difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018.

20.4 Any legal proceedings relating to or in connection with this Contract shall be limited to the exclusive jurisdiction of the High Court of Kerala.

21. COMPLETE AGREEMENT

The terms and conditions of this ORDER shall constitute the entire agreement between the parties hereto. Changes will be binding only if the amendments are made in writing and signed by an authorized representative of FACT.

22. TRANSIT INSURANCE

Unless otherwise agreed, transit insurance shall be arranged by FACT under FACT’s open cover policy.

23. ORDER OF PRECEDENCE

In case of any conflict between these STANDARD TERM AND CONDITIONS and the SPECIAL TERMS&CONDITIONS agreed to for a particular ORDER, the latter shall prevail to the extent applicable.
INSTRUCTIONS TO BIDDERS for e-TENDERS

1. Bidders shall study carefully the complete enquiry documents viz. Notice Inviting Tenders, Technical Procurement Specifications, Pre-Qualification Criteria, Instructions to Bidders, Special Terms & Conditions of the enquiry, Standard Terms and Conditions, Price Bid format (BoQ), Bank Guarantee formats etc., as applicable to the Enquiry.

2. Offers against this enquiry shall be submitted online on e-procurement portal https://e-procure.gov.in, with valid 'Digital Signature Certificate' (DSC). Offers submitted on any other platform or in any other mode including e-mails, typed/printed offers as hard copy etc. SHALL NOT be accepted.

3. All interested bidders are requested to register themselves on the above website with their valid DSC. It is mandatory for bidders to have valid DSC (of Class II or Class III) issued by any of the Certifying Authority approved by Govt. of India for participating in the enquiry. Valid DSC shall be arranged by the bidders themselves at their cost. Bidders may refer Bidders Manual Kit available on the above website for detailed information and instructions for registering, submitting offers etc.

4. The documents, if any, which necessarily have to be submitted in originals if specified specifically in the enquiry documents, shall be submitted offline. However, scanned copies of such documents shall be uploaded along with the offer submitted online.

5. **EARNEST MONEY DEPOSIT (EMD):**

5.1 EMD, if specified in the Enquiry / NIT, shall be remitted through RTGS / NEFT. UTR No. / scanned copy of the payment receipt shall be submitted along with the Part-A of the bid. Details of Bank A/c for remittance of EMD are given below:

   Name of A/c Holder: Fertilisers And Chemicals Trivancore Ltd.
   Account Type : Cash Credit
   Account No : 57017844467
   IFS CODE : SBIN0070158
   Name of Bank : State Bank of India
   Branch : Udyogamandal
   District : Ernakulam
   State : Kerala.

5.2 Bids without EMD shall be rejected except in the following cases. EMD will be exempted for Govt. Depts./firms/public sector units / Startups recognised by Dept. of Industrial Policy & Promotion, GoI / MSE units registered under MSMED Act / firms registered under NSIC/Khadi Board etc. as per applicable govt. directives, on submission of valid documents in proof of the same.

5.3 If the bidder retracts from or without request of FACT revises, his bid within the validity period of the bid, the EMD shall liable to be forfeited without prejudice to FACT’s other rights to claim damages.

5.4 EMD of the bidder whose bid is accepted and order / contract is awarded will be adjusted against Security Deposit (SD) to be remitted after the remittance of SD as per the terms and conditions of the Contract.

5.5 In case the bidder whose bid is accepted, fails to deposit the prescribed Security Deposit or fails to execute the agreement or fails to commence the execution of the work within the specified time, the contract issued to him is liable to be cancelled and the Earnest Money already deposited by the contractor shall be forfeited without any further reference to the contractor and alternative arrangements made at the risk and cost of the Contractor without prejudice to FACT’s other rights to claim damages

5.6 EMD of the unsuccessful bidders shall be refunded immediately after the contract is finalized.

5.7 No interest shall be paid on the EMD.

6. **PRE-QUALIFICATION**

6.1 The bidders shall meet the pre-qualification criteria prescribed, if any, for the tender. The bids of such bidders who meet the pre-qualification criteria will only be considered for evaluation and ordering.

6.2 Bidders shall submit self-attested copies of supporting documents as specified in the enquiry, failing which such bidders are liable to be considered not meeting pre-qualification criteria and their bids will not be considered further for evaluation and ordering.

6.3 Except in the cases of items / services related to public safety, health, critical security operations and equipment etc., FACT at its discretion may relax the conditions of prior turnover and prior experience for Startups recognised by Dept. of Industrial Policy & Promotion (DIPP), subject to meeting quality and technical specifications, on furnishing copies of relevant certificates / documents in proof of the such recognition by DIPP.

6.4 FACT may relax conditions of prior turnover and prior experience with respect of Micro and Small Enterprises – MSEs (Ref Cl. 17.2.1 & 17.2.2 below), if specified in the enquiry / pre-qualification criteria for bidders, subject to meeting of quality and technical specifications.
7. The vendor shall confirm their adherence to technical specifications and other terms and conditions of the enquiry documents forming part of this enquiry by furnishing duly filled in Compliance Statement. Deviations to the enquiry terms and conditions, if any, shall be specified therein.

8. Technical Brochures, if any, of all items quoted shall be attached along with the offer. Detailed instruction manuals should accompany supply of items.

9. The approximate weight and size of the offered items shall be indicated in the bid.

10. Transit insurance shall be in the scope of FACT, unless specified otherwise.

11. The payment term offered shall be as specified in the enquiry. Unless otherwise specified, the payment term shall be 100% after receipt and acceptance of the items at FACT Stores.

12. If the situation so warrants, the purchaser reserves the right to accept any part of the offer or portion of the quantity offered and the bidder shall supply the same at the rate quoted.

13. SUBMISSION OF BIDS

13.1 Bids shall be submitted in two parts or in single part as specified in the Enquiry.

13.2 TWO PART BIDDING

Bids shall be submitted in two parts, if specified in the Enquiry, as follows:

13.2.1 PART-A: PRE-QUALIFICATION cum TECHNO-COMMERCIAL BID.

This part shall contain:

i. Scanned copy of EMD Instrument / claim for exemption with supporting documents.

ii. Pre-qualification format duly filled in along with self-attested scanned copies of supporting documents as specified in the enquiry or claim for exemption as per Cl. 6.3 above with supporting documents.

iii. Techno-Commercial Offer.

iv. Drawings, technical specifications, data sheets, catalogues/technical brochures etc. as per Enquiry, as applicable.

v. Technical Check-List duly filled in.

vi. Compliance Statement duly filled in.

vii. UN-PRICED PRICE BID duly filling all relevant columns for P&F, taxes, duties and any other charges, as applicable, as percentage of the basic price quoted, but without mentioning prices. Against each line item the bidder shall mention ‘QUOTED’ or ‘NOT QUOTED’ as the case may be.

13.2.2 Part-B: PRICE BID

This part shall contain Price Bid i.e. Bill of Quantity (BoQ) attached to the enquiry filling all relevant information such as, name of the bidder, and basic price, P&F, taxes, freight etc. as called for each line item.

13.2.3 The priced BoQ shall be uploaded strictly in the format attached with the enquiry, failing which the offer is liable to be rejected. Renaming or changing format of the BoQ sheet will not be accepted by the System.

13.2.4 Please fill-in all the relevant fields. Blank fields in the uploaded BoQ shall be taken as that particular tax / duty / charge is not applicable or as included in the basic price. No claim afterwards will be entertained.

13.2.5 Prices shall be quoted only in the prescribed BoQ and those indicated elsewhere, if any, shall not be considered.

13.2.6 Bidders shall quote the unit prices in figures strictly in the order of serial numbers and units as per the Price Bid (BoQ). The rates of all applicable taxes/duties shall be clearly indicated. The Price Basis shall be indicated in Part-A and the break-up of all expenses shall be furnished in Part-B to facilitate evaluation. The prices shall be firm without any escalation on any account till the order is completely executed.

13.2.7 BoQ shall be uploaded only in Part B

13.3 SINGLE PART BIDDING

Bids shall be submitted with all the documents as specified in Part-A & Part B above in a single part.

13.4 All parts of the Bid shall be uploaded with all relevant documents before due date & time in the above portal. The system does not allow submission of bids or any other document forming part of the bid after the due date & time of bid submission. Non-submission of any document or submission of incomplete documents may result in rejection of offers.

13.5 Timely submission of offers along with all the relevant documents online is the responsibility of the bidders. The bids shall be submitted well in advance to avoid last minute issues like non availability of internet, server etc., FACT shall not
be held responsible for bidder’s inability to submit
documents in time due to power failure,
on非complete submission of offers or non
submission of any documents forming part of the
offers.

14. GOODS & SERVICE TAX (GST)

14.1 FACT’s provisional Id in the state of Kerala is
32AAACT6204C1Z2. The bidder shall furnish the
following details in the offer:

i. Place of supply

ii. Address of the supplier billing the item if it is
different from (i) above.

iii. GST rates applicable for each item / service.

iv. HSN / SAC codes applicable for each item / service.

14.2 In the case of unregistered supplier, a declaration
to that effect with reasons thereof shall be
furnished.

14.3 In the event of an order, the seller shall

i. submit GST compliant tax invoice to FACT along
with supply and ensure uploading the same as per
statute in the prescribed time limit and

ii. file monthly returns in time enabling FACT to
claim input tax credit.

14.4 GST charged by the supplier / contractor shall be
released separately to the supplier / contractor
only after filing of

i. the outward supply details & the monthly return
on GSTN portal by the supplier / contractor and

ii. on matching the input tax credit to such invoice
with the corresponding details of outward supply
of the supplier / contractor.

14.5 In case FACT incurs any loss or liable for any
interest, penalty etc. due to denial / reversal of
such input tax credit in respect of the invoice
submitted by the supplier / contractor, for the
reasons attributable to the supplier / contractor,
the same shall be recovered from the supplier /
contractor.

14.6 Further in case FACT is deprived of the input tax
credit due to any reason attributable to the
supplier / contractor the same shall not be paid or
recovered, if already paid to the supplier /
contractor.

15. OVERSEAS VENDORS

Overseas vendors shall note the following while quoting:

15.1 Vendor shall quote CFR Cochin (Kochi), India
basis.

15.2 Shipping terms referred to shall be governed by
the definitions of latest INCOTERMS.

15.3 Please mention the Country of works, shipping point(s) / port of shipment and
Banker’s address in the offer.

15.4 Seller shall be responsible for all taxes, duties and
levies chargeable to export of goods in the
country of origin and / or upto Port of Shipment /
Gateway Airport. All taxes and duties in India shall
be borne by FACT, excluding those for free
replacements due to short shipment / guarantee
failure etc.

15.5 Agency commission, if any, shall be clearly
indicated in the offer with full address of the
Indian Agent. The rate of agency commission,
included or payable extra is to be clearly indicated
in the offer and shall be shown separately in the
Invoice also. Agency commission shall be paid in
Indian Rupees.

16. BID OPENING

16.1 The bids of all bidders (only Part-A in the case of
two part bidding) who submit their Bid by the due
date and time shall be opened online, on the
specified bid opening date & time

16.2 In the case of Two Part Bidding, Part-B - Price bids
of bidders whose Part-A bid is found acceptable
based on pre-qualification and techno-commercial
evaluation only will be opened on a subsequent
date. Price bid opening date & time shall be
intimated to the qualified bidders by email, SMS
etc. through the system.

17. PURCHASE PREFERENCE:

17.1 FACT reserves the right to allow Purchase
Preference to Public Sector Enterprises or any
other firms as admissible under the existing
Government Policy/rules.

17.2 MSE UNITS

17.2.1 Firms registered under MSMED Act shall be
extended benefits under public procurement
policy for MSEs and such other provisions effected
by GoI from time to time, as applicable,
(hereinafter called ‘the Policy’) including special
benefits to MSE firms owned by SC/ST and women
entrepreneurs, on furnishing relevant documents.
as proof.

17.2.2 MSE bidders shall declare their UAM number in the CPP Portal, failing which such bidders will not be able to enjoy the benefits as per the Policy for tenders invited electronically through CPP Portal.

17.2.3 When supply / service as per the tender is divisible in nature, MSEs quoting within the price band prescribed in the Policy shall be allowed to supply / execute a portion of the requirement as prescribed in the Policy, subject to conditions as mentioned in the Policy.

17.2.4 When supply / service as per the tender is non-divisible or non-splitable in nature, MSEs quoting within the price band prescribed in the Policy (in ascending order) may be awarded full / complete supply of total tendered value to such MSEs, subject to conditions as mentioned in the Policy.

17.3 MAKE IN INDIA

17.3.1 Purchase preference shall be given to local suppliers in the manner specified in the latest Revision of Public Procurement (Preference to Make in India) Order 2017, and amendments thereto, subject to orders issued by Deptt. of Fertilisers, Govt. of India.

17.3.2 For the purpose of extending purchase preference as in Cl. 17.3.1 above, the minimum local content shall be 50% and margin of purchase preference shall be 20%, as defined in the above Orders, unless specified otherwise in the Enquiry.

17.3.3 To claim benefits under Make in India Order, the bidder shall provide self-certification or such other certificate(s) as prescribed in the Order, as applicable, that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

18. DEVIATIONS:

18.1 Bidders are requested not to deviate from enquiry terms & conditions as set out in the enquiry documents / enquiry, such as submission of security deposit, performance bank guarantee, delivery period and payment terms indicated in the enquiry. Offers with deviations in SD clause are liable to be rejected, unless specific exemption is available to any bidder by virtue of any valid govt. Notification / policy. Suitable price loadings shall be done as specified in the enquiry. No advance payment will be made.

19. STANDARDS:

19.1 All the Bids and correspondence, including but not limited to drawings, bill of materials, spare parts list, lubrication requirements, instruction booklets, etc, shall be in English language only.

19.2 Bidders shall quote/supply only acceptable makes of equipment/items as indicated in the enquiry, wherever applicable.

19.3 Where a brand name with the phrase ‘Or Equal’ has been used in the Enquiry, bidders may offer alternative equipment and materials, which have similar characteristics and provide performance and quality equal or superior to that of the specified brand. Supporting documentation shall be provided.

19.4 All weights and dimensions shall be in metric system only, unless otherwise specified in the enquiry documents.

20. BANK GUARANTEES:

20.1 All Bank guarantees shall be submitted as per the relevant formats attached and shall be issued/confirmed by a nationalized / scheduled bank in India.

21. COMPLETION PERIOD:

21.1 The bidder shall quote completion period for supply and commissioning of the equipment / system (if specified in the enquiry) within the delivery period as required as per the enquiry documents, reckoned from the date of placement of Letter of Intent / Order.

22. CONFORMITY:

22.1 Bids must conform in all respects with the applicable Specifications, Drawings, Data Sheets, and the Terms and Conditions of this enquiry. Bidders must certify in the form of Compliance Statement that his bid complies with all Enquiry documents and Technical Specifications.

22.2 Bidders may offer alternate proposal (viz. his standard design), but in doing so, he must state all deviations and/or exceptions to the enquiry specification and the reasons thereof. However, FACT reserves the right to reject such alternate offers, without assigning any reason whatsoever.

22.3 Normally no deviations are accepted by FACT. If at all the bidder requires any deviations, the same shall be listed out specifically and enclosed with the enquiry as per Compliance Statement. Except for such deviations specifically listed out in the bid, all other terms and conditions in the enquiry form, drawings and Annexures shall be deemed to have been accepted by the bidder.
23. EVALUATION OF QUOTATION

23.1 Unless otherwise specified, the items / quantity in this tender are divisible in nature. i.e. price evaluation and comparison will be done item-wise and orders may be placed on more than one vendor, subject to technical and commercial feasibility, considering economy, user requirement and / or statutory obligations such as purchase preference to MSEs, purchase preference as per Make in India order etc.

23.2 Landed cost of items to be supplied including mandatory spares, operational spares and accessories services, etc. as specified in the enquiry, are considered for determining the L1 bidder. (Landed cost inter alia, includes taxes, duties, freight, P&F charges, inspection charges and any other additional charges to FACT's account)

23.3 All bids shall be compared in Indian Rupees. In case bids are in foreign currency (applicable to foreign bidders) the exchange rate as on the date of price bid opening will be considered for comparison.

23.4 Terms of payment: Interest charges shall be considered at the prevailing bank rate for payments not envisaged in the enquiry documents.

23.5 Other Deviations: Suitable loading will done for other deviations, if specified in the enquiry.

24. PURCHASER'S RIGHT:

24.1 FACT reserves the right to reject any or all bids without assigning any reason whatsoever. No claims shall lie against FACT on this account and FACT’s decision in this regard shall be final and binding on the bidders.

25. BID VALIDITY:

25.1 The rates quoted by the bidder shall be valid for FACT’s acceptance for a period of 90 days from the date of opening of Part-A bids.

26. ENQUIRY UPDATES:

26.1 Bidders are requested to visit our web site (www.fact.co.in) or Central Public Procurement Portal (https://eprocure.gov.in) for any updates/corrigenda on the enquiry, including extension of due date, if any. No advertisement will be given in the print media.

27. BLACK LISTED / VENDORS UNDER ENQUIRY HOLIDAY:

27.1 Offers of vendors who are Black listed / put under Enquiry Holiday by FACT will not be considered.

28. FRAUD PREVENTION POLICY:

Bidders shall comply with Fraud Prevention Policy of FACT 2012 (FPPF 2012). The said policy is available in FACT Website www.fact.co.in.

29 GENERAL

Unless otherwise mentioned specifically, all correspondence relating to this enquiry shall be made in English referring the enquiry number and date, to:

The Senior Manager (Materials),
Corporate Materials,
Petrochemical Division Administrative Building,
FACT Limited, Udyogamandal,
Cochin-683501
India
TERMS & CONDITIONS OF SUPERVISORY SERVICES

1.0 SCOPE
The scope of supervisory services shall be as detailed in the Technical Procurement Specifications (TPS).

2.0 TERMS OF PAYMENT
2.1 Payment shall be made after completion of the work and satisfactory fulfillment of Vendor's obligations at site as per TPS, calculated at the per diem rates for the actual duration of their work at site. No payments shall be made for leave days / Holidays.
2.2 Weekly time sheets shall be submitted by the servicemen to FACT for verification and signature. In case of absence from work either on leave or sickness or departure to other location, the daily fee shall not be payable to servicemen for such days of absence.
2.3 Income-tax as per tariff and rules in force shall be deducted from the payment to be made for these services by the Vendor’s personnel, unless otherwise agreed.

3.0 TRAVEL / STAY ARRANGEMENTS
Vendor shall make his own arrangement for the travel of the personnel from his place to Kochi. Local transportation to & fro to FACT, lodging and boarding of the personnel deputed to the site by vendor for all activities in connection with this work including warranty period shall also be arranged by vendor.

4.0 PERIOD OF SERVICE
After receipt of the equipment site, FACT shall inform Vendor of the date on which erection is proposed to be started, for supervision of which services of Vendor’s personnel are required, with a week’s notice. Vendor’s personnel shall be made available at site on the date so notified byFACT. They shall leave the site only after satisfactory fulfillment of all obligations of the Vendor at the site, after getting permission from FACT.

5.0 SPECIAL TOOLS
Special tools, if any, required for their work shall be brought by the Vendor's personnel. Vendor shall furnish to FACT the list of such tools, if any, well in advance, enabling FACT to obtain permits, where so required.

6.0 INSURANCE
Insurance for the Vendor’s personnel deputed to PURCHASER’S Site as well as the insurance covering the tools employed by these personnel for their work at SITE, shall be arranged by the Vendor at his own cost.

7.0 BUYER’S RIGHT
In case Vendor’s personnel do not carry out responsibilities properly or behave properly, FACT/CONSULTANT shall have reasonable right to ask such Personnel to leave site. All travel and daily expenses incurred in this case shall be to Vendor’s account.

8.0 IDLE TIME
In the event any waiting or idle time or delays are expected to exceed more than 15 days at a stretch, FACT shall have the right to send back the servicemen. If recall notice is given within 15 days of departure of servicemen on above account, vendor shall send the same servicemen for continuity of job. In the event the waiting time exceeds one month, Vendor shall have the right to reassign the technical person or to recall the technical person. All travel expenses from the job site, return to job site by same supervisor or substitute servicemen shall be borne by FACT. However FACT shall not be charged any fee when servicemen of Vendor are under such recall or reassignment to other places.

9.0 FACILITIES AT SITE
Medical facilities shall be limited to the facilities available with the client at the site.

10.0 FIRM PRICE
The rates for supervision shall be firm till completion of work.

11.0 TRAINING
If so required by FACT, the servicemen of the vendor shall impart necessary training to FACT personnel in the operation and maintenance of the equipment / plant supplied by the Vendor.

12.0 FORCE MAJEURE
In the event of Force Majeure, FACT shall have the option to send back the servicemen. The travel expenses for the servicemen for such occasions shall be borne by FACT.
PROFORMA OF BANK GUARANTEE FOR PERFORMANCE

(To be obtained from a Nationalised/scheduled bank in India)

The Fertilizers And Chemicals Travancore Ltd.,
Udyogamandal

This deed made the .......... day of .......... Two Thousand.......... by..........Bank, a Bank incorporated in .......................................................... and having its Registered Office at ................. (hereinafter called ‘The Bank’ which expression shall include its successors & assigns)

AND WHEREAS The Fertilisers And Chemicals Travancore Ltd, Udyogamandal P.O., Kerala (hereinafter called ‘The Company’) has placed an Order with M/s..................................................(hereinafter called ‘The Supplier/Contractor’) in terms of Order No.................... dated................for the supply/work of........................... at a total cost of ₹............. (Rupees..........................only)

AND WHEREAS the said Company has called upon the said Supplier/Contractor to give a Bank Guarantee for ₹.................. (Rupees..........................only) equal to.................. % of the above Order towards due performance of the equipment/spare parts/materials in terms and conditions contained in the said Order.

AND WHEREAS the said Company has agreed to accept a guarantee from us.

We, the said Bank do hereby undertake to pay the Company an amount not exceeding ₹........................ (Rupees..........................only) against any loss or damage caused to or suffered by or would be caused to or suffered by the Company by reason of any breach by the said Supplier/Contractor of any of the terms and conditions of the said Order.

We, ..................................., do hereby undertake to pay the amount due and payable under this guarantee without any demur merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or suffered by or would be caused to or suffered by the Company by reason of breach by the said Supplier/Contractor of any of the terms and conditions contained in the said Order. Any such demand made on the Bank shall be final, conclusive and binding on the Bank as regards the amount due and payable by the Bank under this guarantee.

We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the Supplier/Contractor in any suit or proceeding pending before any court or Tribunal relating thereto, our liabilities under this present being absolute and unequivocal.

The payment so made by us under this guarantee shall be valid discharge of our liability for payment there under and the Supplier/Contractor shall have no claim against us for making such payment.

We, ..................................., further agree that the guarantee herein contained shall remain in full force until performance warranty period has expired and all other conditions have been fulfilled in terms of the Order by the Supplier/Contractor and the Company discharges the guarantee accordingly.

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We, ........................................., further agree with the said Company that they shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Order or to extend time of performance by the said Supplier/Contractor or to postpone for any time and from time to time any of the powers exercisable by the Company against the said Supplier/Contractor and to forebear or enforce any of the terms and conditions relating to the said Order or securities available to the Company and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Supplier/Contractor or for any forbearance, act or omission on the part of the Company or any indulgence by the Company to the said Supplier/Contractor or any other matter or thing which under the law relating to sureties, but for this provision, have the effect of so relieving us.

This guarantee shall not be affected by any change in the constitution of the Bank or the Company or the said Supplier/Contractor nor shall this guarantee be affected by any change in the constitution of the Company or the said Supplier/Contractor by absorption with any other body or corporation and this guarantee shall be available to or enforceable by such body or corporation.

Our guarantee shall remain in force until................. Unless a claim or demand is made within six months after the expiry of the guarantee, all the Company's rights under the guarantee shall be deemed as waived/forfeited and we shall be relieved and discharged from all liabilities there under. Notwithstanding anything contained hereinafter, our liability under this guarantee shall be limited to an amount not exceeding ₹ ............ (Rupees.................................................. only)

Any notice by way of request, demand or otherwise hereunder may be sent by post to the Bank addressed as aforesaid and if sent by post, it shall be deemed to have been given at the time when it would be delivered in due course of post and in proving such notice when given by post, it shall be sufficient to prove that the envelope containing the notice was so posted and certificate signed by an officer of the Company that the envelope was so posted, shall be conclusive.

Disputes/differences, if any, relating to or arising out of this Bank Guarantee, shall be settled by courts having Jurisdiction over Udyogamandal, in Kerala State, where the registered office of the Company is situated and no other court shall have jurisdiction in the matter.

We, ............................................................., Bank lastly undertakes not to revoke this guarantee during its currency except with the previous consent of the Company in writing.

Dated this ......................... day of ......................... Two Thousand..............

For (Name of Bank)

Authorised Official

Name:

Designation:

Place:

Full address of the Branch issuing this guarantee
PROFORMA OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT
(To be obtained from a Nationalised/scheduled bank in India)

The Fertilizers And Chemicals Travancore Ltd.,
Udyogamandal

WHEREAS FACT (Fertilisers and Chemicals Travancore Ltd., Udyogamandal P.O., Kerala, (hereinafter referred to as the Company) has placed an Order No...................... dated ......................... with M/s .......................................................... (hereinafter called the Supplier/Contractor) for the supply/work of ......................... and where as it is one of the conditions of the said Order that the Supplier/Contractor shall either remit a sum of ₹.................. (Rupees ............................. only) or furnish a Bank Guarantee for ₹ .............(Rupees ............................) as security deposit for the due fulfilment of the said Order by the said Supplier/Contractor.

In consideration of the Company having agreed to accept a Bank Guarantee from us towards such security deposit in lieu of the cash deposit in accordance with the terms and conditions of the above Order, we, ............................................., the Bank (hereinafter referred to the Bank) do hereby undertake to pay the Company merely on demand any sum or sums from time to time demanded by the Company up to a maximum of ₹.................. (Rupees ............................. only) being the amount of the security deposit against any loss or damage caused to or suffered by or would be caused to or suffered by the Company by reason of any breach by the said Supplier/Contractor of any of the terms and conditions contained in the said Order.

We, the said Bank, do hereby undertake to pay the amount so demanded by the Company without any demur merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or suffered or would be caused to or suffered by the Company by reason of breach by the said Supplier/Contractor of any of the terms and conditions contained in the said Order. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee.

We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the said Supplier/Contractor in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this guarantee shall be valid discharge of our liability for payment there under and the said Supplier/Contractor shall have no claim against us for making such payment.

We, ............................................., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Order and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Order have been fully paid and its claim satisfied or discharged or till the Company certifies that the terms and conditions of the said Order have been fully and properly carried out by the said Supplier/Contractor and accordingly discharges this guarantee.
We, .................................................., further agree with the said Company that they shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Order or to extend time of performance by the said Supplier/Contractor or to postpone for any time and from time to time any of the powers exercisable by it against the said Supplier/Contractor and either to enforce or forebear from enforcing any of the terms and conditions governing the said Order or securities available to the Company and the said Bank shall not be released from its liability under these presents by any exercise by the Company of the liberty with reference to the matters aforesaid or by reason of time being given to the said Supplier/Contractor or any other force-bearance, act or omission on the part of the Company or any indulgence by the Company to the said Supplier/Contractor or any other matter or thing whatsoever which under the law relating to sureties, but for this provision, have the effect of so relieving us.

This guarantee shall not be affected by any change in the constitution of the Bank or the Company or the said Supplier/Contractor nor shall this guarantee be affected by any change in the constitution of the Company or the said Supplier/Contractor by absorption with any other body or corporation and this guarantee shall be available to or enforceable by such body or corporation.

Our guarantee shall remain in force until............................... Unless a claim or demand is made within six months after the expiry of the above date, all the Company's rights under the guarantee shall be deemed as waived/forfeited and we shall be relieved and discharged from all liabilities there under. Notwithstanding anything contained hereinbefore, our liability under this guarantee shall be limited to an amount not exceeding र……………(Rupees…………………………………………………………only).

Any notice by way of request, demand or otherwise here under may be sent by post to the Bank addressed as aforesaid and if sent by post, it shall be deemed to have given at the time when it would be delivered in due course of post and in proving such notice when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and certificate signed by an officer of the Company that the envelope was so posted, shall be conclusive.

Disputes/differences, if any, relating to or arising out of this Bank Guarantee, shall be settled by courts having Jurisdiction over Udyogamandal, in Kerala State, where the registered office of the Company is situated and no other court shall have jurisdiction in the matter.

We, ...................................................., Bank lastly undertakes not to revoke this guarantee during its currency except with the previous consent of the Company in writing.

Dated this ......................... day of .............. Two Thousand......................

For (Name of Bank)

Authorised Official

Name:

Designation:

Place:

Full address of the Branch issuing this guarantee