# OIL & GAS DEVELOPMENT COMPANY LIMITED
## PROCUREMENT DEPARTMENT, ISLAMABAD
## FOREIGN SECTION A

(To be completed, filled in, signed and stamped by the principal)

**ANNEXURE 'A'**

**Material** PROCUREMENT OF METHYL DI ETHANOL AMINE (MDEA)

**Tender Enquiry No** PROC–FA/CB/P&P/UCH–5056/2021

**Due Date**

**Evaluation Criteria** FULL PKG.

## SCHEDULE OF REQUIREMENT

| Sr No | Description | Unit | Quantity | Unit Price (FOB) | Total Price (FOB) | Unit Price C & F BY SEA | Total Price C & F BY SEA | Deviated From Tender Spec. If Any |
|---|---|---|---|---|---|---|---|---|
| 1 | METHYL DI ETHANOL AMINE (MDEA) FOR H2S REMOVAL PLANT, drum packing. ( JAFFTREAT MS–100 by HUNTSMAN)/(GASSPEC–SS–3 by INEOS)/(UCARSOL HS–103 by DOW)/(OASE Yellow by BASF) or equivalent OTHER SPECIFICATIONS AS PER ATTACHMENT | Kilo Grams | 150500 | | | | | |
| 2 | METHYL DI ETHANOL AMINE (MDEA) FOR H2S REMOVAL PLANT, drum packing. ( JAFFTREAT MS–100 by HUNTSMAN)/(GASSPEC–SS–3 by INEOS)/(UCARSOL HS–103 by DOW)/(OASE Yellow by BASF) or equivalent OTHER SPECIFICATIONS AS PER ATTACHMENT | Kilo Grams | 172000 | | | | | |

**Note:**

1. **Bid Bond Amount:** Bid (s) must be accompanied by an upfront bid bond in the form of pay order/ demand draft or bank guarantee issued by scheduled bank of Pakistan or a branch of foreign bank operating in Pakistan for an amount of US $13,000/= (United States Dollar Thirteen Thousand Only) or equivalent Pak Rupees, with technical bid and valid for 150 days from the date of opening of the bids.

2. **Delivery period:** Delivery period of the quoted product within 120 days from the date of establishment of Letter of Credit (LC).

# Selective Methyl Di Ethanol Amine (MDEA)

OGDCL invite bids for the supply of 322,500 Kg selective Methyl Di Ethanol Amine (MDEA) in accordance with the terms and conditions specified in the Tender Documents.

## 1. Scope of Work

The following scope of supply shall be applicable for supply of MDEA.

1.1 Supply of selective MDEA as per quantity mentioned at SOR.
1.2 Provide operating guidelines and technical literature for the proper usage of supplied MDEA.
1.3 Technical support services throughout the usage of supplied MDEA as per Clause-7 on as and when requirement basis.
1.4 Detailed simulation study for both Uch-I and Uch-II plants with process flow diagram as per data mentioned at Clause 2.2.
1.5 Provide details of testing/monitoring parameters required to monitor the performance, quality and operatibility of supplied MDEA.

## 2. Basis for Selection of Selective MDEA

### 2.1 Specifications

The Selective MDEA should be **equivalent** or meet the specifications of one of the following recommended brand:

i. UCARSOL HS-103
ii. JEFFTREAT MS-300
iii. GAS/SPEC SS-3
iv. OASE YELLOW

Bidder should invariably mention the exact physical and chemical properties of their quoted product. Only to write conforming to or OK will not be acceptable. For all equivalent brands, the offered MDEA shall follow specifications of one of the above listed brand.

### 2.2. Plants Design Data for Simulation

#### 2.2.1. UCH-1

#### 2.2.1.1 Raw/Feed Gas Composition

The raw gas mixture used for Uch-1 design is as follows:

| Components | Mole % |
|---|---|
| C1 | 36.07 |
| C2 | 0.94 |
| C3 | 0.60 |
| i-C4 | 0.09 |
| n-C4 | 0.11 |
| i-C5 | 0.05 |

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| | |
|---|---|
| n-C5 | 0.04 |
| C6+ | 0.10 |
| Water contents ($H_2O$) | 0.16 |
| N2 | 20.93 |
| CO2 | 41.07 |
| H2S | 0.1 |

| | | |
|---|---|---|
| Water | : | 4 bbl/mmscf |
| Condensate | : | 0.5 bbl/mmscf |
| Operating Pressure | : | 850 – 1250 psig |
| Operating Temperature | : | 80 – 130 °F |
| Available Steam | : | 38 MT/h |

### 2.2.1.2. Product / Sale / Sweet Gas Specification

The plant is designed for the following product gas specification:

| | | |
|---|---|---|
| H2S Concentration | : | Less than 15 ppm |
| Sulphur Concentration | : | Less than 15 ppm |
| CO2 Concentration | : | Less than 42 Mole % |
| CO2 + N2 Concentration | : | Not less than 54 Mole % |
| Heating Value (C.V) | : | 455 ± 25 BTU/SCF |
| Temperature | : | 56 – 120 °F |

### 2.2.1.3. Ambient Data

| | | |
|---|---|---|
| Maximum normal monthly pressure | : | 1012.8 millibar |
| Minimum normal monthly pressure | : | 988.5 millibar |
| Minimum winter temperature | : | 32 °F |
| Maximum summer temperature | : | 131 °F |

### 2.2.1.4. Process Description

**Gas Treating System**

Feed gas is first cooled or preheated depending on the inlet temperature in the Inlet Gas Cooler / Heater, E-100 up to 90 °F. The cooling and heating medium used in the exchanger is cooling water and steam respectively. The gas then enters into a horizontal three phase separator to remove any condensate / water carry-over with gas. Dehydration Plant Inlet Separator, V-100 is relocated downstream on Inlet Gas Cooler / Heater, E-100 to serve this purpose.
Feed gas then enters the Amine Contractor, C-100 at a temperature of 90 °F and pressure of 790 psig. Gas enters the Contractor at the bottom of 1st tray and as it flows-up, it contacts with the lean amine solution flowing down. The lean amine solution, at a temperature of 105 °F is used to reduce the H2S level of gas from 1000 ppm to less than 15 ppm. The design flow rate of amine considered for the design is 1770 GPM, but current maximum flow rate of amine 1350 GPM is to be considered.

**Amine Regeneration System**

Rich amine from the Contractor exits at a temperature of 145 °F and flows into Amine Flash Drum, V-200. The Flash Drum operates at a pressure of 50 psig. Reduction in pressure of rich amine from 790 to 50 psig results in flashing dissolved gases which flows to the Incinerator as waste fuel gas. A

pressure controller is provided on the waste fuel gas to maintain a constant pressure in the Flash Drum.

Rich amine from Flash Drum flows through the Lean / Rich Amine Exchanger, E-200 A/B and is heated by cross exchange with the lean amine exiting from the bottom of Amine Striper, C-200. The heated rich amine is flashed through a level control valve to 10 psig before it enters in to the Stripper at 222 °F.

Overhead vapors from the stripper are partially condensed and sub cooled to 120 °F in the Amine Stripper Reflux Condenser, E-202 using cooling water. The vapor / liquid mixture is separated in Amine Stripper Reflux Drum, V-202 A/B are provided to pump the condensed liquid back to stripper to provide reflux. Acid gas from the top of reflux drum is disposed off to Incinerator through a pressure control valve.

Lean amine from the bottom of the Stripper is cooled by rich amine in the Lean / Rich Amine Exchanger, E-200 A/B from 251 to 162 °F.

The lean amine is then pumped by Amine Booster Pumps, P-200 A/B. Ten (10) percent of the lean amine flows through Amine Cartridge Filter, S-201 A/B and Amine Charcoal Filter, S-200 A/B to remove any solid particles and entrained hydrocarbons. The remaining lean amine is pumped to Contractor via the Amine Circulation Pump, P-201 A/B. Lean Amine from 162 to 105 °F by cooling water in Amine Solution Cooler, E-203.

### 2.2.1.5 Amine Contractor Towers / Stripper Design Data

Amine Contractor

(a). Design

| | | |
|---|---|---|
| Internal Diameter | : | 114 inches |
| No. of plates | : | 6 |
| Tray spacing | : | 24 inches |
| Metallurgy | : | Clad SS-304L base material SA 516 70N |
| Type | : | Two pass, valve trays |
| Tray Material | : | SS-304 |
| Tray Weir Height | : | Adjustable 0 – 2 inches |
| Vessel Height | : | 30 feet (T/T) |
| Design temperature | : | 250 °F |
| Design Pressure | : | 950 psig |

(b). Operating Parameters

| | | |
|---|---|---|
| Feed Tray | : | 4th tray |
| Operating pressure | : | 790 psig |
| Operating temperature | : | 120 – 145 °F |
| Top Temperature (Gas Leaving) | : | 120 °F |
| Bottom temperature (Selective MDEA Leaving) | : | 145 °F |
| Selective MDEA Inlet Temperature | : | 105 °F |
| Flow Rate | : | 1350 GPM |

Amine Regenerator

(a). Design

| | | |
|---|---|---|
| Internal Diameter | : | 132 inches |
| No. of plates | : | 18 |
| Tray spacing | : | 24 inches |
| Metallurgy | : | SA 516-70N |

| | | |
|---|---|---|
| | | SS-304L |
| Tray Material | : | SS-304 |
| Tray Weir Height | : | Adjustable 0 – 2 inches |
| Vessel Height | : | 58 feet (S/S) |
| Design temperature | : | 305 °F |
| Design Pressure | : | 80 psig |

(b). Operating Parameters

| | | |
|---|---|---|
| Operating pressure | : | 10 psig |
| Operating temperature | : | 207 – 251 °F |
| Top Temperature (Gas Leaving) | : | 207 °F |
| Bottom temperature (Selective MDEA Leaving) | : | 251 °F |
| Selective MDEA Inlet Temp | : | 222 °F |
| Reflux Inlet Temperature | : | 140-160 °F |
| Direct Stream Inlet | : | 50 psig (saturated) |

## 2.2.2. UCH-II

### 2.2.2.1. Raw/Feed Gas Composition

The raw gas mixture used for plant design is as follows:

| Components | Mole % |
|---|---|
| C1 | 35.36 |
| C2 | 0.91 |
| C3 | 0.58 |
| i-C4 | 0.09 |
| n-C4 | 0.1 |
| i-C5 | 0.05 |
| n-C5 | 0.03 |
| C6+ | 0.09 |
| N2 | 21.35 |
| CO2 | 41.43 |
| H2S | 0.1 |
| Water contents | 0.16 |

| | | |
|---|---|---|
| Water | : | 4 bbl/mmscf |
| Condensate | : | 0.5 bbl/mmscf |
| Operating Pressure | : | 850 – 1250 psig |
| Operating Temperature | : | 80 – 130 oF |
| AVAILBLE HOT OIL DUTY | : | 60.27 MMBTU of each re-boiler<br>Total 04 Amine Reboilers, two on each train. |

### 2.2.2.2. Product / Sale / Sweet Gas Specification

The plant is designed for the following product gas specification:

| | | |
|---|---|---|
| H2S Concentration | : | Less than 05 ppm |
| Sulphur Concentration | : | Less than 05 ppm |

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| | | |
|---|---|---|
| CO2 Concentration | : | Less than 42 Mole % |
| CO2 + N2 Concentration | : | Not less than 54 Mole % |
| Heating Value (C.V) | : | 455 ± 25 BTU/SCF |
| Temperature | : | 56 – 120 °F |

### 2.2.2.3. Ambient Data

| | | |
|---|---|---|
| Maximum normal monthly pressure | : | 1012.8 millibar |
| Minimum normal monthly pressure | : | 988.5 millibar |
| Minimum winter temperature | : | 32 °F |
| Maximum summer temperature | : | 131 °F |

### 2.2.2.4. Process Description

The hydrocarbon gas stream before entering to the Amine Contactor is cooled down or heated depending on if its temperature is higher than 113°F or lower than 71°F. In the first case the Feed Heater (300/310-E101) is not used and bypassed whereas the Raw Gas Cooler (300/310-E111, water cooler TEMA-R type) will cooled down the hydrocarbon gas stream to the temperature of 113°F. If the temperature of the gas to be treated is lower than 71°F then the Raw Gas Cooler (300/310-E111) will be not used and bypassed whereas the Feed Heater (300/310-E101) will provide the heat to bring gas temperature from its actual value (lower than 71°F) to the desired value of 71°F. The choice of this solution is due to necessity to have an Amine Contactor feed gas temperature ranging from 71°F up to 113°F.

In both cases an Inlet KO Drum (300/310-V101) with a top demister will be employed to separate any possible liquid phase and to knock out any entrained liquids in the gas stream to be treated. The gas, before entering to the contactor, also passes through a Raw Gas Inlet Filter Coalescer (300/310-V102) located in the absorber feed line between the Feed Heater (300/310-E101) and the absorber inlet. It is effective for removing fine dust from the absorber feed.

The hydrocarbon gas to be treated is fed to the bottom of the Amine Contactor (300/310-T101) and is passed upward through the tried column counter-current to the amine solution, which is fed to the top of the absorber. The H2S and CO2 are absorbed by the amine solution. The treated gas, which have a low acid gas content (i.e. is "sweet"), flows overhead from the top of the Amine Contactor. The treated gas is cooled down, up to 105°F, by means of the Treated Gas Cooler (300/310-E112, water cooler TEMA-R type) and then it flows through the Treated Gas KO Drum (300/310-V103) in which any possible liquid phase and entrained liquids are collected to the bottom and sent to the Rich Amine Flash Drum (300/310-V104).

The solution leaving the bottom of the absorber tower is rich, i.e. it has a high loading of H2S and CO2. This rich solution is sent to the Amine Flash Drum (300/310-V104), made of a skimming section. This vessel has mainly two purposes: It allows light hydrocarbons and some dissolved acid gases to flash off from the rich amine solution; It allows possible free liquid hydrocarbons, entrained in the amine solution, to settle out and be removed through skimming connections.

After passing through the flash vessel, Rich Amine has to be filtrated in the Rich Amine Strainers (300/310-S105), in which a mechanical filtration happens, to remove the insoluble corrosion product. These suspended particulates can foul equipment, especially tower internals and exchangers, resulting in increased pressure drops, lower exchanger heat transfer rates and poor tower efficiencies. The rich amine before being fed to the Amine Regenerator passes through the Lean/Rich Amine Exchanger (300/310-E102) where it is pre-heated by means of hot Lean Amine solution coming from Amine Reboiler. In the Amine Regenerator (300/310-T102) the heat is added, via Regenerator Reboiler (300/310-E103), to the bottom section. This heat vaporizes part of the solution thereby providing an upward flow of stripping vapors which passes in counter-current to the amine solution which is fed to the top section.

A portion of these up flowing stripping vapors condense in the regenerator to supply heat for the endothermic acid gas desorption reactions and for heating the solution to the regenerator bottom temperature. Water vapor and acid gases stripped from the rich solution flow overhead from the top of the Amine Regenerator and are cooled in the Regenerator Condenser (300/310-E114, TEMA-R type) to condense a major portion of the water vapor. This condensate is collected in the Regenerator Reflux Drum (300/310-V106) and continually recycled back, through the Regenerator Reflux Pump (300/310P106A/B), to the Amine Regenerator. Uncondensed acid gas is sent to incinerator 350-H-101. The hot solution leaving the bottom of the Amine Regenerator is lean, i.e.it has a low loading of H2S and CO2.

This hot lean solution passes through the Lean Amine Strainers (300/310-S101), in which a mechanical filtration happens, to remove the insoluble corrosion product, and then it is partly cooled in the Lean/Rich Amine Exchanger (300/310-E102) before being pumped by the Booster Amine Pump (300/310-P104A/B) through the lean amine cooling section made of the Lean Amine Cooler 300/310EA103 (type air cooler API Std.661.), which provides first cooling of the amine stream, followed by the Lean Amine Trim Cooler 300/310-E113 (water cooler TEMA-R type), which ensures the amine to be trim cooled down to the temperature necessary for correct absorption performance. From this cooling section the lean amine is transferred to the lean amine filtering section. This filters slipstream configuration section is made of cartridge filter (Lean Amine Cartridge Filter, 300/310-S103) and carbon filter (Carbon Bed Filter, 300/310-S102). The first provides a mechanical filtration while the second one removes foam-inducing agents such as heavy hydrocarbons, surfactants, etc.

Lean amine from filtering section is stored in the Amine Surge Drum 300/310-V105 to be pumped to the top of Amine Contactor (300/310-T101) through the Lean Amine Circulation Pump (300/310-P105A/B). A slipstream after 300/310-EA103 is dedicated to HSS (Heat Stable Salts) Removal Skid. This skid provides reclaiming of the amine stream by removal HSS which are reducing amine adsorption capacity and which can increase material corrosion problem, so prolonging the amine and equipment life. This skid is normally fed with fresh demy-water (received from battery limits) and the cleaned stream is sent back to the Lean Amine Booster pump (300/310-P104A/B) aspiration line.

Each amine train will be provided with a cooling water system used to produce cooling water for the exchangers 300/310-E-111, 300/310-E112, 300/310-E113 and 300/310-E114. This system will include a complete set of evaporative towers, including Cooling Water Circulation Pumps (300/310-P111A/B), required piping, instrumentation and accessories (including water treatment chemical injection facilities). The cooling water circuit will be also provided of one self-cleaning side filter (310/310-S106) to control the accumulation of dust in the water circuit.

### 2.2.2.5. Amine Contractor Towers / Stripper Design Data

Amine Contractor

(a) Design

| | | |
|---|---|---|
| Internal Diameter | : | 122 inches (3100 mm) |
| No. of plates | : | 12 |
| Tray spacing | : | 24 inches (610 mm)<br>Tray spacing for trays #10, #8 and #6 (lean amine feed points) is 30 inches (760 mm) for the installation of the liquid |
| Metallurgy | : | 304L |
| Type | : | Two pass, valve trays (Floating) |
| Tray Material | : | 304 L |
| Tray Weir Height | : | 1.5 inches |
| Vessel Height | : | 553.1 inches (14050 mm) (T.L/T. L) |
| Design temperature | : | -20/245 °F |
| Design Pressure | : | 1000 psig |

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(b) Operating Parameters

| | | |
|---|---|---|
| Feed Tray | : | 6th tray |
| Operating pressure | : | 750/845 psig |
| Operating temperature | : | 71/204 |
| Top Temp. (Gas Leaving) | : | 128 °F |
| Bottom temperature | : | |
| (Selective MDEA Leaving) | : | 168 °F |
| Selective MDEA Inlet Temp | : | 105 °F |
| Flow Rate | : | 1500 GPM |

Amine Regenerator

(a) Design

| | | |
|---|---|---|
| Internal Diameter | : | 126 inches (3200 mm) |
| No. of trays | : | 23 |
| Tray spacing | : | 24 inches |
| Metallurgy | : | 304L |
| Tray Material | : | 304L |
| Tray Weir Height | : | 1.97 inches |
| Vessel Height | : | 698.8 inches (17750mm) |
| Design temperature | : | 30/320 °F |
| Design Pressure | : | 70/ F.V psig |

(b) Operating Parameters

| | | |
|---|---|---|
| Operating pressure | : | 16 psig |
| Operating temperature | : | 211/270 |
| Top Temperature | | |
| (Gas Leaving) | : | 210 °F |
| Bottom temperature | | |
| (Selective MDEA Leaving) | : | 262 °F |
| Selective MDEA Inlet Temp. | : | 215 °F |
| Reflux Inlet Temperature | : | 110 °F |
| Hot Oil Inlet Temp. | : | 388 °F @ 50-60 psig |

**3. Necessary Data/ Attachments with Bid**

**3.1. Clients / Sales Achievement (for same application)**

Bidder has to furnish two letter of recommendation/performance comments of the client/user from any reputed petrochemical company whom they have supplied not less than 105,000 Kg of MDEA and one letter is mandatory from Pakistan sour gas processing plant identical to our UCH I&II plants while the Bidder who has supplied the same chemical to OGDCL through bidding procedure and subsequently having satisfactory performance is not required to submit letter of recommendation while attach the copy of PO with quantity supplied.

| S.No | Name of client with address and phone Nos. | Contract/Purchase order No. with date | Quantity Supplied |
|---|---|---|---|
| | | | |
| | | | |

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### 3.2. Bid / Technical Attachments

| S.No | Description |
|---|---|
| 01 | Original authority letter issued by the manufacturer to bidder and local agent for quoting their product |
| 02 | Complete product data memorandum, technical literature, specifications, application notes, storage, and handling. |
| 03 | Compatibility certificate/declaration with existing in use MDEA for mixing of two brands as per Clause-6.5 and within use antifoam Maxamine 70-B. |
| 04 | Detailed simulation reports of Uch-I and Uch-II plants as per date at Clause 2.2 with flow diagrams and name of software used for simulation. |
| 05 | MSDS and valid ISO-9001 & ISO-14001 certificates of manufacturer |
| 06 | Fresh 3rd party lab analysis report of offered MDEA |
| 07 | Client list as per format given at Clause-3.1 |
| 08 | Two letters of recommendation / performance (as per Clause 6.6) |

### 3.3. Bid Summary Sheet

Bid summary sheet should be mentioned at least following information/data.

| S. No. | | Description | |
|---|---|---|---|
| 01 | A | Name of Bidder | |
| | B | Name of authorized signatory of bidder | |
| | C | Complete address, phone, fax numbers, web site and email of bidder | |
| 02 | A | Name of Local agent | |
| | B | Name of authorized signatory of local agent | |
| | C | Complete address, phone, fax numbers, web site and email of local agent | |
| 03 | A | Name of manufacturer | |
| | B | Complete address, phone, fax numbers, email and website of manufacturer | |
| 04 | | Brand Name of Product | |
| 05 | | Country of origin/manufacturing facility | |
| 06 | | Port of shipment | |
| 07 | | Effective service life of product and shelf life of product should not less than 3 years | |
| 08 | | HS code of the product | |
| 09 | | Offered delivery period | |
| 10 | | Packing details | |

## 4. Packing

4.1. Chemical will be supplied in brand new drums as per manufacturer's specification. Packing should be of international standard (pelletized packing)

4.2. Each drum should be clearly marked with contract no., chemical name, and name of manufacturer, net & gross weights, lot/batch No. and manufacturing and expiry date.

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## 5. Delivery Period

MDEA should be delivered in minimum possible time not more than 120 days after LC opening.

## 6. Specific Conditions and Vendor/bidder Liabilities

The company (OGDCL) invites bids from bidders for the supply of Selective MDEA in accordance with the terms and conditions listed below:

6.1. Only genuine manufacturers will be considered for technical evaluation having MDEA manufacturing experience of at least 10 years duly supported by valid ISO certificates for manufacturing / production of offered MDEA. Trade houses and stockiest will not be treated as manufacturers.

6.2. Bidder should be submitted two sets of technical bids (01 original and 01 copy). All documents listed at Claus 3 must also be attached with bid.

6.3. Bidder must have a local set-up and technical experts for technical and back-up services in Pakistan to render technical assistance to OGDCL in shortest possible time and effective manner. Detail C.V. of technical expert(s) must also be attached with bid.

6.4. Bidder shall provide complete details with their technical bid for the shipping, storage, handling and topping/mixing procedure of their offered MDEA with brands mentioned at Clause 2.1.

6.5. Bidder will have to confirm and submit a firm declaration (on original manufacturer letterhead) regarding:

a. Vendor shall guarantee that their offered Selective MDEA will achieve results/ performance as per Clause 2.2.1.2 and 2.2.2.2 and shall fulfills the process requirements as per mentioned brands in Claus 2.1 by using the existing plant configuration/scheme duly verified by simulation reports.
b. Compatibility/equivalency of quoted MDEA with brands mentioned at Clause 2.1 for future mixing and topping.
c. Quoted MDEA not reactive nor degraded (loss of chemical properties) upon mixing/topping with brands at Clause 2.1.

6.6. If bidder did not supplied quoted MDEA to OGDCL previously, they will have to submit two performance / recommendation letters from their clients to whom they supplied at least 500 drums of quoted MDEA during last 10 years one letter is mandatory from Pakistan oil and gas industry.

6.7. Bidder will have to mention all the testing/monitoring parameters required to evaluate the quality, performance and operability of their quoted MDEA.

6.8. Specifications of quoted MDEA must be mentioned clearly, word accepted or complied will not acceptable. Shelf life of quoted MDEA is not less than 30 months.

6.9. Bidder will have to submit information/data regarding the foaming tendency of their offered MDEA and also recommend compatible brand(s) of Antifoam with their quoted MDEA, and will also confirm the compatibility of their offered MDEA with currently in use antifoam Max Amine 70-B on manufacturer letter head.

6.10. OGDCL will carry out 3rd party pre-shipment inspection at its own cost from approved firms. The TPI firm will submit report directly to OGDCL and consignment will only be shipped after acceptance/endorsement of TPI report(s) by OGDCL.

6.11. Bidder will responsible to arrange a fully sponsored visit of 02 OGDCL officials to manufacturing facility for training and in order to authenticate quality control setup of manufacturer at their manufacturing facility. Bidder will have to quote the visit cost

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separately which will be included in financial evaluation however payment will only be made if OGDCL avail the visit.

6.12. Material must have to be lift back by the vendor if found not as per technical specifications of this particular tender enquiry even after its receipts at the OGDCL base store and shall have to replace with the material conforming to technical specifications within 60 days, with no additional cost to OGDCL.

## 7. Technical Services

7.1. Local agent will be responsible to arrange their technical expert visit to OGDCL UCH Gas Treatment Plant for troubleshooting throughout the usage of their supplied MDEA on as and when required basis. Bidder can quote separate price for said visit (max. 05 days per visit) which will not include in financial evaluation. Free or quoted visit prices should be valid for 02 years however for charged visit; payment will only be made if OGDCL avail this expertise. Bidder quoted irrational prices will consider for disqualification at financial evaluation stage.

7.2. Local agent will be responsible to arrange complete analysis of MDEA sample(s) from manufacturer's testing / R&D facility on as and when required basis. Analysis charges must also be quoted separately (not included in financial evaluation) and shall be valid for 02 years however payment will only be made for such analysis if availed by OGDCL as per quoted rates. Analysis of MDEA samples covers sample transportation to manufacturer lab facility and covered all general parameters, gas chromatographic analysis, metal scan and impurities.

7.3. Acceptance of following perpetual technical support.

i. Telephonic / email conversations, no limits
ii. Update of new product/development