Annexure-II

OIL INDIA LIMITED
(A Government of India Enterprise)
P.O. Duliajan-786602, Assam, India
E-mail: material@oilindia.in

INVITATION FOR BID
LOCAL COMPETITIVE BID

OIL INDIA LIMITED invites Local Competitive Bid (LCB) through its e-procurement portal https://etender.srm.oilindia.in/irj/portal for the following items:

Tender No	Bid Closing/ Opening Date	Item & Qty
SDI0225P16 Dtd. 12.02.2016 SINGLE STAGE TWO BID SYSTEM	**07.04.2016**	**HIGH MAST**

Tender fee (Non-refundable): Rs 1,000.00; Bid Closing/Opening Time: **(11 Hrs.) IST/(14 Hrs.) IST**; Period of sale of documents **till One week prior to bid closing date**.. The complete bid documents and details for purchasing bid documents, participation in E-tenders are available on OIL's e-procurement portal https://etender.srm.oilindia.in/irj/portal as well as OIL's website www.oil-india.com.

NOTE: All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e- portal only and no separate notification shall be issued in the press. Bidders should regularly visit above website and e-portal to keep themselves updated.

OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)

TELEPHONE NO. (91-374) 2808719
FAX NO: (91-374) 2800533
Email: ranjanbarman@oilindia.in ; erp_mm@oilindia.in

FORWARDING LETTER

Tender No. : **SDI0225P16 Dtd. 12.02.2016**

Tender Fee : **Rs 1,000.00**

Bid Security Amount : **Rs. 1,15,000.00**

Bidding Type : **SINGLE STAGE TWO BID SYSTEM**

Bid Closing on : **As mentioned in the e-portal**

Bid Opening on : **-do-**

Performance Security : **Applicable**

Integrity Pact : **Applicable**

OIL invites Bids for **High Mast** through its e-Procurement site under **SINGLE STAGE TWO BID SYSTEM**. The bidding documents and other terms and conditions are available at Booklet No. MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents

The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions.. The details of items tendered can be found in the Item Data and details uploaded under Technical RFX.

The tender will be governed by:

a) For technical support on various matters viz. Online registration of vendors, Resetting of Passwords, submission of online bids etc, vendors should contact OIL's ERP MM Deptt at following: Tel Nos = 0374-2807171 , 0374-2807192. Email id = erp_mm@oilindia.in.

b) OIL's office timings are as below:

	Time (in IST)
Monday – Friday	**07.00 AM to 11.00 AM; 12.30 PM to 03.30 PM**
Saturday	**07.00 AM to 11.00 AM**
Sunday and Holidays	**Closed**

Vendors should contact OIL officials at above timings only.

c) "General Terms & Conditions" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders.

d) Technical specifications and Quantity as per **Annexure – 1A**.

e) The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents.

f) In the event of receipt of only a single offer against the tender within B.C. date, OIL reserves the right to extend the B.C. date as deemed fit by the Company. During the extended period, the bidders who have already submitted the bids on or before the original B.C. date, shall not be permitted to revise their quotation.

g) All corrigenda, addenda, amendments, time extension, clarifications etc. To the tender will be hoisted on OIL's website (www.oil-india.com) and in the e-portal (https://etenders.srm.oilindia.in/irj/portal) only and no separate notification shall be issued in the press. Prospective bidders are requested to regularly visit the website and e-portal to keep themselves updated.

h) Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).

i) Bidder are advised to fill up the Technical bid check list (**Annexure EEE**) and Response sheet (**Annexure FFF**) given in MS excel format in Technical RFx -> External Area - > Tender Documents. The above filled up document to be uploaded in the Technical RFX Response.

Special Note:

1.0 General Qualification Criteria:

In addition to the general BRC/BEC, following criteria on Bidders' Experience and their financial capabilities shall be considered (**documentary evidence to be provided along with the bid in Technical RFx -> External Area - > Tender Documents**) as on the Bid Closing Date:

Criteria	**Complied / Not Complied.** **Documentary evidence submitted / not submitted**
a) Bidder should have experience of successfully executing similar order of Rs **35.02 Lakhs** during last 3 years. "Similar Order" denotes supply, installation , testing and commissioning of 20 m or 30 m height high mast lighting system (non-flameproof/flameproof) with any type/no. Of flood light fittings (SON/Metal Halide/HPMV etc.) including makin of Civil Foundation.	
b) Annual financial turnover of the firm in any of the last 3 financial years or current financial year should not be less than **Rs 116.74 Lakhs.**	

Note: Documentary evidence in respect of the above should be submitted in the form of copies of relevant Purchase Orders along with copies of any of the documents in respect of satisfactory

execution of each of those Purchase Orders, such as – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of each of the purchase orders cited above. For Annual financial turnover enclose the audited Annual Reports or balance sheet certified by a chartered accountant.

2.0 Vendors having OIL's User ID & password shall purchase bid documents on-line through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Vendors who do not have OIL's User ID & password shall obtain User ID & password through online vendor registration system in e-portal and can subsequently purchase bid documents through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Alternatively application showing full address/email address with Tender Fee (Non-refundable) of Rs. 1,000.00 in favour of M/s Oil India Limited and payable at Duliajan is to be sent to Head-Materials, Oil India Limited, P.O. Duliajan, Assam-786602. Application shall be accepted only upto one week prior to the Bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate "REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO …" for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL's e- Procurement portal. No physical tender documents will be provided. Details of NIT can be viewed using "Guest Login" provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL's web site www.oil-india.com.

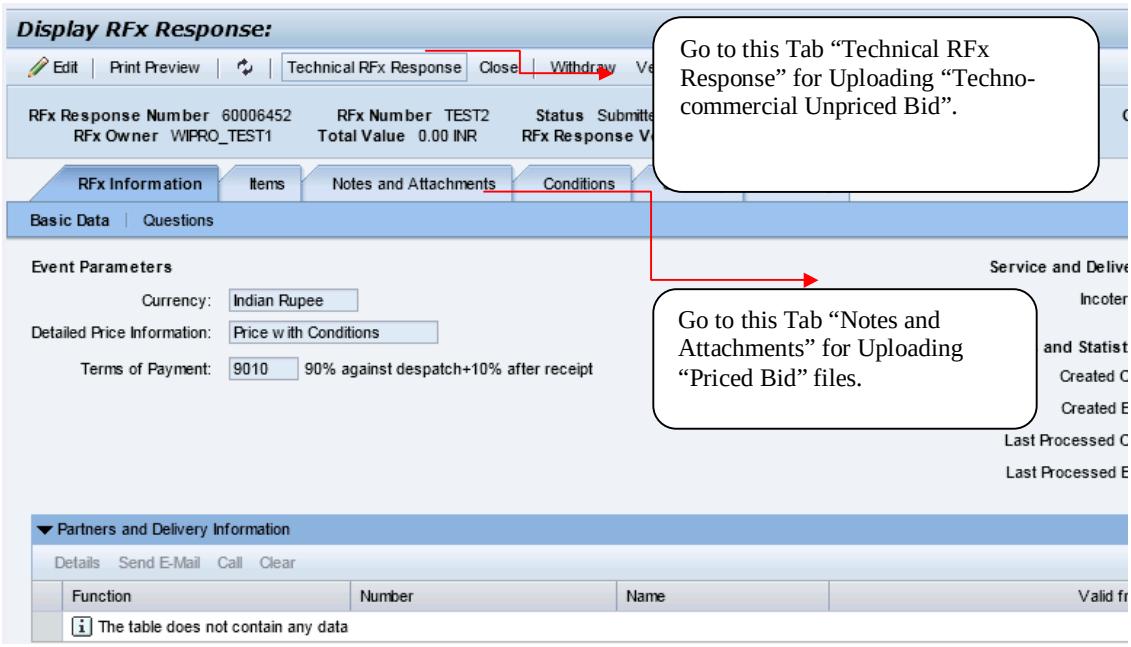
NOTE:
PSUs and MSE units are provided tender documents Free of Cost (as per govt guidelines), however they have to apply to OIL's designated office to issue the tender documents one week prior to the Bid closing date (or as amended in e-portal).

3.0 The tender is invited under SINGLE STAGE-TWO BID SYSTEM. The bidders are required to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic format in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

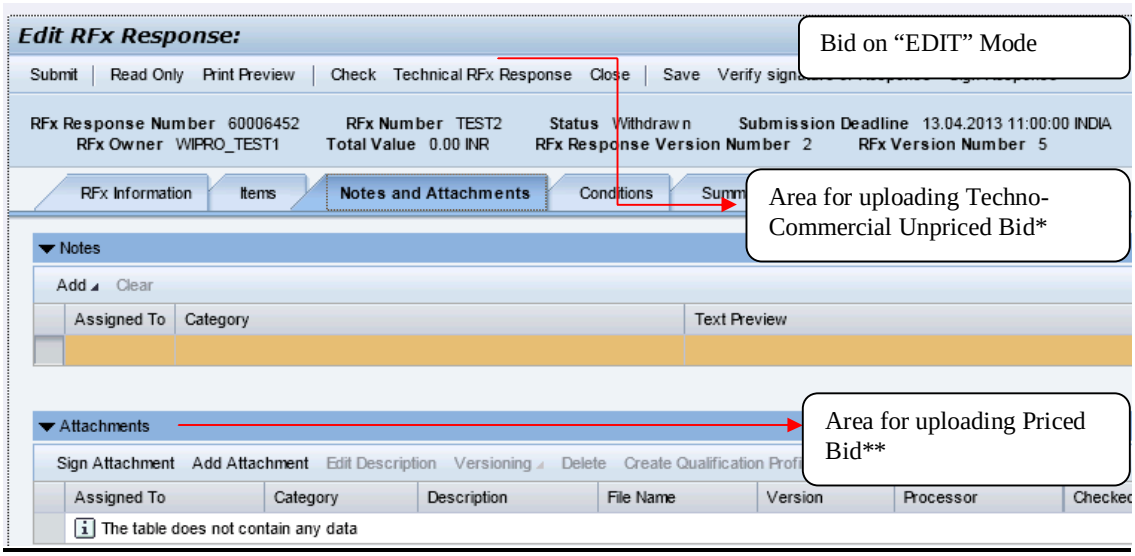
3.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFx Response-> User - > Technical Bid only**.** The "**TECHNO-COMMERCIAL UNPRICED BID**" shall contain all techno-commercial details **except the prices**. **Please note that no price details should be uploaded in** Technical RFx Response**.**

3.2 The "**PRICE BID**" must contain the price schedule and the bidder's commercial terms and conditions.**The prices of the items should be quoted in "Conditions Tab". Details of prices as per Bid format / Commercial bid can be uploaded as Attachment under the attachment option under "Notes & Attachments".**

3.3 A screen shot in this regard is given below. Offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in Annexure-CCC.



On "EDIT" Mode- The following screen will appear. Bidders are advised to Upload "Techno-Commercial Unpriced Bid" and "Priced Bid" in the places as indicated above:



Note :

* The "Techno-Commercial Unpriced Bid" shall contain all techno-commercial details **except the prices**.

** The "Price bid" must contain the price schedule and the bidder's commercial terms and conditions. For uploading Price Bid, first click on Sign Attachment, a browser window will open, select the file from the PC and click on Sign to sign the Sign. On Signing a new file with extension .SSIG will be created. Close that window. Next click on Add Atachment, a browser window will open, select the .SSIG signed file from the PC and name the file under Description, Assigned to General Data and clock on OK to save the File.

4.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with **Tender no.** and **Due date** to **Head**

Materials, Materials Department, Oil India Limited, Duliajan - 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender.

a) **Original Bid Security**
b) **Detailed Catalogue (if any)**
c) **Any other document required to be submitted in original as per tender requirement**

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in triplicate.

5.0 Benefits to Micro & Small Enterprises (MSEs) as per OIL's Public Procurement Policy for Micro and Small Enterprises (MSEs) shall be given. Bidders are requested to go though ANNEXURE – I of General Terms and Conditions for E- PROCUREMENT LCB TENDERS (MM/LOCAL/E-01/2005) for more details. MSE bidders are exempted from submission of Tender Fees and Bid Security/Earnest Money provided they are registered for the items they intend to quote.

6.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

7.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed envelope are also submitted at the above mentioned address before the bid closing date and time failing which the offer shall be rejected.

8.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.

9.0 **SINGLE STAGE TWO BID SYSTEM** shall be followed for this tender and only the PRICED-BIDS of the bidders whose offers are commercially and technically acceptable shall be opened for further evaluation.

10.0 **a) The Integrity Pact is applicable against this tender. Therefore, please submit the Integrity Pact document duly signed along with your quotation as per BRC. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure DDD of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be submitted by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway.**

b) The name of the OIL's Independent External Monitors at present are as under:

SHRI RAJIV MATHUR, IPS (Retd.)
Former Director, IB, Govt. of India,
e-Mail ID : rajivmathur23@gmail.com

11.0 The tender shall be governed by the Bid Rejection & Bid Evaluation Criteria given in enclosed **Annexure-CCC**. However, if any of the Clauses of the Bid Rejection Criteria /

Bid Evaluation Criteria (as per **Annexure-CCC**) contradict the Clauses of the tender and / or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 for E-procurement (LCB Tenders) elsewhere, those in the BEC / BRC shall prevail.

12.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

13.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.

14.0 If Bank Guarantee is submitted towards 'Bid Security', then bidders have to ensure that the Bank Guarantee issuing bank indicate the name and detailed address (including e-mail) of their higher office from where confirmation towards genuineness of the Bank Guarantee can be obtained.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Yours Faithfully

Sd-
(R. BARMAN)
SR. MANAGER MATERIALS (IP)
FOR : HEAD-MATERIALS

Annexure - CCC

Tender No & Date: SDI0225P16 Dtd. 12.02.2016

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)

The following BRC/BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BRC/BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the "Bid Rejection Criteria" as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BRC / BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BRC / BEC shall prevail.

Criteria	Complied / Not Complied. (Remarks if any)
1.0 BID REJECTION CRITERIA (BRC): The bid shall conform generally to the specifications, terms and conditions given in this document. Notwithstanding the general conformity of the bids to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected. **A) COMMERCIAL:** i) Validity of the bid shall be minimum 120 days from the Bid Closing Date. ii) Bid security: The bid must be accompanied by Bid Security of **Rs 1,15,000.00** in OIL's prescribed format as Bank Guarantee or a Bank Draft/Cashier cheque in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Head Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender. **The Bank Guarantee towards Bid Security shall be valid for 10 months from Bid closing date. (i.e. upto 07.02.2017).** **Bid Security may also be paid online on or before the Bid Closing Date and Time mentioned in the Tender.** **If bid security in ORIGINAL of above mentioned Amount and Validity is not received or paid online within bid closing date and time, the bid submitted through electronic form will be rejected without any further consideration.** For exemption for submission of Bid Security, please refer Clause No. 8.8 of	

General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders.

The format of Bank Guarantee towards Bid Security (Annexure – VII) has been amended to Annexure – VII (Revised) and bidders should submit Bank Guarantee towards Bid Security as per Annexure – VII (Revised) only.

iii) Bids are invited under "Single Stage Two Bid System". Bidders have to submit both the "Techno-commercial Unpriced Bids" and "Priced Bids" through electronic form in the OIL's e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. For details of submission procedure, please refer relevant para of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. Any offer not complying with the above shall be rejected straightway.

iv) Performance Security:

The successful Bidder will have to provide Performance Security @ 10% of order value. The Performance Security must be valid for one year from the date of successful commissioning of the equipment or 18 months from the date of despatch whichever is earlier.

The validity requirement of Performance Security is assuming despatch within stipulated delivery period and confirmation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms and conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

v) The Bank Guarantee should be allowed to be encashed at all branches within India.

vi) The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.

vii) Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.

viii) All the Bids must be Digitally Signed using "Class 3" digital certificate with Organisation's name *(e-commerce application)* as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3 with Organisation's Name" digital certificate, will be rejected.

ix) Technical RFx Response folder is meant for Technical bid only. Therefore,

No price should be given in Technical RFx Response folder, otherwise the offer will be rejected.

x) Price should be maintained in the "online price schedule" only. The price submitted other than the "online price schedule" shall not be considered.

xi). Integrity Pact :

OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure DDD of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be submitted by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway.

xii). A bid shall be rejected straightway if it does not conform to any one of the following clauses:
(a) Validity of bid shorter than the validity indicated in the Tender.
(b) Original Bid Security not received within the stipulated date & time mentioned in the Tender.
(c) Bid Security with (i) Validity shorter than the validity indicated in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.
(d) In case the Party refuses to sign Integrity Pact.
(e) Average Annual Turnover of a bidder lower than the average Annual turnover mentioned in the Tender.

2.0 BID EVALUATION CRITERIA (BEC)

The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BRC, will be considered for further evaluation as per the Bid Evaluation Criteria given below.

A) TECHNICAL:

i) The bids will be evaluate as per NIT specifications.
ii) All the items will be procured from the same source & evaluation will be done accordingly.

B) COMMERCIAL:

i). To evaluate the inter-se-ranking of the offers, Assam Entry Tax on purchase value will be loaded as per prevailing Govt. of Assam guidelines as applicable on bid closing date. Bidders may check this with the appropriate authority while

submitting their offer. ii) Priced bids of only those bidders will be opened whose offers are found technically acceptable. The technically acceptable bidders will be informed before opening of the "priced bid". iii). To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.	

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

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TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI0225P16 Dtd. 12.02.2016.

	Complied / Not Complied. (Remarks if any)
ITEM NO. 10, HIGH MAST 30M, (QNTY. – 2 NOS.) Supply, erection, testing & commissioning of 30 meter tall High mast Lighting system with 12 nos. of 2 x 400 watt SON fittings with Non integral control gear box. Details of specifications are given below: **ANNEXURE-1** TECHNICAL SPECIFICATIONS OF 30 MTRS HIGH MAST LIGHTING SYSTEM 1.0 MAST: 1.1 The high mast shall be continuously tapered, polygonal cross section and 30 meters high above base plate. The mast shall be fabricated from steel plate welded polygonal construction in suitable number of sections, (not less than 2)telescopically jointed giving a continuous tapered profile and presenting good visual appearance. The mast shaft shall be made with best steel in compliance with BS: EN 10025 FE 510 and shall have guaranteed characteristics conforming to this standard. 1.2 Material of the mast sections shall conform to IS: 2062. The mast sections shall be hot dip galvanized to minimum 80 micron both inside and outside conforming to IS: 4759-1984, IS: 2629-1985, IS: 2633-1072. 1.3 Mast structure shall be designed to withstand wind velocity of 180km/hr. with 3 sec. gust at a height of 10 m above ground level conforming IS: 875 part III - 1987 and should have wind load factor 1.25 and material factor 1.15. 1.4 The base flange shall be provided with gusset and high tensile anchor bolts. 1.5 The bottom most section shall accommodate winch electric drive, cable, plug/socket etc. with a proper door opening in order to permit clear access to these components. The door shall be dustproof, vermin proof and weather protected (IP 55) and shall be provided with suitable locking arrangement. 1.6 Mast shall be provided with lightning protection. 1.7 Mast and the electricals shall be suitably earthed. Bottom section of the mast shall have suitable studs for earth connection. 2.0 LANTERN CARRIAGE 2.1 The lantern carriage shall be of steel tubular ring type construction designed to accommodate 12 nos. of HPSV non-integral type flood light luminaires with necessary C.G. Box in a radially symmetrical fashion. 2.2 Lantern Carriage/Accessories shall be made with best steel in compliance with BS: EN 10025 FE 430 A and shall have guaranteed characteristics as per this standard. 2.3 The complete lantern carriage assembly shall be hot dip galvanized after fabrication.	

Galvanization shall be as per IS: 4759; minimum thickness of galvanization 80 micron.
2.4 The carriage shall have proper arrangement to avoid swing and to prevent damage to mast surface or other installed parts during lowering/raising operation of carriage.
2.5 All hardware used shall have necessary corrosion protection.

3.0 WINCH ASSEMBLY/POWER TOOL:

3.1 Winch assembly, meant for hoisting of lantern carriage, shall be a double winch and shall be fixed in the base of the mast and shall have provision to operate both manually and electrically. The winch shall be suitably designed to handle the total weight of lantern carriage assembly with all fittings and accessories with required factor of safety.
3.2 The average rate of raising and lowering shall be not less than 3 metres per minute. Initial supply of oil for winch shall be arranged by the party.
3.3 The winch shall be of self sustaining and self lubricating type with positive locking arrangement. The rope drum shall be fabricated as per IS: 807 and the wire rope shall be wound/unwound on the winch during movement of lantern carriage.
3.4 Lantern carriage shall be operated with three point (three rope) system for preventing wobbling of the carriage during raising and lowering.
3.5 The material of construction for top pulley block shall be non-corrosive and preferably made of die cast LM-6 aluminum /brass alloy with self lubricating bearing.
3.6 Design of the pulley shall be such that wire rope does not come out of the groove at any time during lowering/raising of the lantern carriage.
3.7 The design shall ensure that the operation of pulley is maintenance free. Pulley should be provided with weather proof cover. Particular care shall be exercised in all aspects of design, manufacture, and testing and installation arrangement of the system to ensure optimum safety under all operating condition to give a minimum 25 years of operating life.
Test certificates shall be provided with each winch. Offer should also state clearly the capacity, operating lubricant, speed and recommended lubricant.

4.0 WINCH DRIVING POWER UNIT:

4.1 The winch drive unit shall be squirrel cage reversible induction motor with following characteristic:
a. Supply voltage: 415 V, 3 phase, 50 HZ
b. Insulation: Class F, temperature class limited to class B
c. Class of protection: IP 55, Weather resistant
Make- Crompton Greaves/ Kirloskar Ltd./ Siemens/ Bharat Bijlee
4.2 The capacity of the electric motor used in power tool shall be compatible to handle the design load of the complete lantern carriage with luminaires (Min 2.0 HP).
4.3 Rate of raising and lowering of the mast shall be not less than 3 metres per minute.
4.4 The drive unit shall be housed at the base of the mast.
4.5 For safety reasons and final precision docking of lantern carriage ring, the power unit must have provision to be operated manually by using external crank device/lever without removing the drive motor from the winch unit. Crank device shall be provided with each high mast unit.

5.0 WIRE ROPE:

5.1 The wire ropes shall be flexible marine grade and non corrosive stainless steel grade SS 316.
5.2 A minimum 8 turn of wire rope shall be on the drum when the lantern carriage is fully lowered.

5.3 The stainless steel wire shall be minimum 6 mm diameter, 7x19 constructions which shall have a factor of safety not less than 5 times the safe working load (SFL) of winch.

6.0 CONTROL PANEL (FEEDER PILLAR BOX):

A feeder pillar box made of 2mm/14 SWG CRCA sheet metal, self supporting, floor mounted, dust, vermin and weather proof for outdoor use shall be supplied for locally/automatically switching ON/OFF of luminaires. The control panel shall comprise the following:

6.1 Incomer- 01 no., 415 V, 63 Amp, 4 pole MCCB. Make: GE/Siemens/Schneider /Legrand/ABB

6.2 Earth leakage Relay with separate core balance current transformer. Sensitivity: 30 mA to 3A, Time delay: 0 - 5 sec., current and time setting adjustable in steps. Make: Schneider/Legrand

6.3 Isolator MCCB 40 Amps, 4 P, as isolator- 02 nos., one each for motor starter and luminaires
Make: Legrand/Schneider/Siemens/GE/ABB

6.4 Light controller- 01 no. Triple pole power contactor AC3 rating min. 40 A rating for long life
Make: Legrand/Schneider/Siemens/GE/L & T

6.5 Triple pole power contactor AC3 rating min. 16 A- 02 nos., rated for motor hoisting and lowering
Make: Legrand/Schneider/Siemens/GE/L & T

6.6 Digital Voltmeter & Ammeter, size-96mm X 96mm, Range 0-600V, Current transformer with CT
Ratio-50/5 Make- Conzerv /AEI Ltd.

6.7 LED indication lights- 3 nos. for R,Y,B phase indication, make: Binay/Schneider

6.8 Start/Stop push button for locally switching ON/OFF the luminaires - 1 set.

6.9 Separate TBs of suitable sizes for incomer cable, outgoing motor and luminaire cable and control cables shall be used.

6.10 NS 4 type fuses carrier and base shall be used for control circuit protection.

6.11 Automatic light switch with digital time switch, DIN rail mounted, suitable for astronomical calculations of sunrise and sunset during summer/winter by setting date, time and positions of longitude and latitude, model-Astro Rex-D21 of Legrand, astro-time -switch, 240V AC, 50HZ, Make- Legrand/ Schneider

6.12 All power and control wiring shall be done with single core, 1100 V grade PVC insulated, IS marked, flexible copper cable. Power cable size shall be as per IS: 8623, control cable 2.5 Sq. mm.

6.13 Brought out terminals/spreader bars of tinned copper shall be provided at incomer MCCB for terminating 4x25 Sq. mm PVCA cable. All outgoing connections from the incomer MCCB shall be tapped through suitable rectangular copper bars.

6.14 Detachable gland plate and copper brought out terminals for incoming and outgoing cable connection shall be provided. Suitable single compression metallic glands for the luminaire and motor cables shall be provided in the feeder pillar.

6.15 Feeder Pillar box is to be painted with by 2 coats of primer followed by epoxy grey paint.

6.16 Push button for raising and lowering the mobile part shall operate on "Dead man principle" i.e. action shall cease as soon as the button is released.

6.17 The height of foundation for panel shall be min. 450 mm from the ground level. Also, the gland plate of the feeder pillar shall be at a height of minimum 450 mm from foundation level.

6.18 Feeder Pillar should be located at min. 5 meters radial distance from the high mast.

GA and Single line diagram of the feeder pillar shall be submitted with the offer.

7.0 LUMINAIRES:

Twelve nos. non-integral type, double flood light luminaries with IP 65 protection similar to SNT 001 of Philips make, complete with 2X 400 W HPSV tubular lamps and external control gear box with all accessories shall be used in the mast. Proper sized single compression cable glands (Nickel plated SS/brass material) shall be used for glanding of all cables at both ends. Cast aluminium alloy control gear box shall be complete with electro-magnetic ballast, ignitor, PF correction capacitor and individual HRC fuses.
Make of Luminaires shall be restricted to: PHILIPS/CROMPTON/BAJAJ/GE.

2 nos. 4 core, 6 sq. mm, copper conductor, flexible copper screened, EPR insulated and PVC/PCP sheathed cable, 1100V grade, Make- Nicco/ Incab /Polycab /Finolex/CCI/Universal/KEC (RPG)/ Ankur/Radiant/NECAB shall be used from the mast terminal block to the lantern carriage. Terminal block shall be covered to protect it from the entry of insects and dust particles.

8.0 EARTHlNG:

The mast shall be provided with suitable body earthing and lightning protection system. Mast shall have suitable earth boss (terminal) for 30 x 6 GI strap earth connections. The complete earthing system shall comprise the following:
8.1 50 mm dia, 3 metre Long G.I. Pipe earth electrodes with brick enclosure and cover – 4 Nos.
8.2 30 mm X 6 mm G.I. straps for earth connection of the mast at the studs (from studs to earth electrodes)
Out of the four electrodes, 2 nos. electrodes shall be used for lightning protection and 2 nos. electrodes shall be used for earthing of the feeder pillar and luminaires/motor.

9.0 TOOL BOX:

A tool box of sheet steel containing a set of general and special purpose tools is to be supplied along with high mast for maintenance job.

10.0 AVIATION OBSTRUCTION WARNING LIGHTS & LIGHTNING ARRESTOR:

10.1 02 (two) nos. medium intensity LED flasher type aviation obstruction light fitted in a weather- proof box on body unit of Aluminium alloy shall be supplied with each mast system. The cover of the light will be glass with rubber gasket (IP 65 protection). The light fitting shall have integral terminal chamber. LEDs are to be mounted on fire retardant epoxy printed circuit board.
10.2 Light fittings shall be suitable for 240V AC, 50 Hz supply. Luminous intensity of the lamp shall be minimum 90 candela. Unit shall be similar to Baliga luminaire model: AW300. Make- Binay/Bajaj/ Philips/Baliga.
10.3 Lightning protection rod (lightning finial, GI/copper, 1 m length) shall be provided and fixed rigidly on the top of the high mast.

11.0 FOUNDATION:

11.1 Foundation of high mast shall be suitable for Zone V considering the Earth Quake resistance measure and party shall have to furnish the design of the foundation of High mast along with the offer. Design shall be approved by OIL before acceptance of offer.
11.2 The bearing capacity of the soil is 10 T/m2.

12.0 SCOPE OF SUPPLY AND INSTALLATION: Supply of complete High mast Lighting System shall include: (a) Supply of 30 m high mast structure with lantern carriage raising/lowering mechanism (b) Supply of flood light fixtures & lamps of quantity and capacity specified (c) Supply of aviation obstruction warning lights (d) Supply of lightning arrestor for each light mast (e) Supply of power & control cables as required for power distribution from feeder pillar to all light fittings of each mast (Only cable from source/sub-station to light mast feeder pillar shall be supplied and laid by OIL. All other cabling works required for high mast are in the scope of the contractor). (f) Supply of feeder pillar boards (g) Supply of earth electrodes, GI straps (h) Supply of all materials for four earth pits for each mast Installation and commissioning jobs shall include: (a) Installation, testing & commissioning of the complete light masts with all items and accessories including feeder pillars (b) All cabling works from feeder pillar to mast/power tool/luminaires (c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits 13.0 PRE-DESPATCH INSPECTION & TESTING: High mast systems, complete with feeder pillar and light fittings, will be inspected and tested by OIL's representative at the works/premises of supplier/OEM before dispatch. Modification/correction suggested by the OIL inspector for better operation and ease of maintenance of the high mast system shall be carried out by the supplier without any extra cost to OIL. All charges towards pre-despatch inspection and testing shall be included in the offer. However, to and fro charges of OIL's personnel to suppliers /manufacturer's works will be to OIL's account..	
ITEM NO. 20, INSTALLATION & COMMISSIONING OF ITEM NO. 10 , (QNTY. – 1 AU) Installation and commissioning jobs shall include: (a) Installation, testing & commissioning of the complete light masts including feeder pillars (b) All cabling works from feeder pillar to mast/power tool/luminaires (c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits.	
ITEM NO. 30, HIGH MAST 20M, (QNTY. – 1 NO.) Supply, erection, testing & commissioning of 20 meter tall High mast Lighting system with 8 nos. of 2 x 400 watt SON fittings with Non integral control gear box. Details of specifications are given below:	

Annexure-1

TECHNICAL SPECIFICATIONS OF 20 MTRS HIGH MAST LIGHTING SYSTEM

1.0 MAST:

1.1 The high mast shall be continuously tapered, polygonal cross section and 20 meters high above base plate. The mast shall be fabricated from steel plate welded polygonal construction in suitable number of sections (not less than 2), telescopically jointed giving a continuous tapered profile and presenting good visual appearance.
The mast shaft shall be made with best steel in compliance with BS: EN 10025 FE 510 and shall have guaranteed characteristics conforming to this standard.
1.2 Material of the mast sections shall conform to IS: 2062. The mast sections shall be hot dip galvanized to minimum 80 micron both inside and outside conforming to IS: 4759-1984, IS: 2629-1985, IS: 2633-1072.
1.3 Mast structure shall be designed to withstand wind velocity of 180km/hr. with 3 sec. gust at a height of 10 m above ground level conforming IS: 875 part III - 1987 and should have wind load factor 1.25 and material factor 1.15.
1.4 The base flange shall be provided with gusset and high tensile anchor bolts.
1.5 The bottom most section shall accommodate winch electric drive, cable, plug/socket etc. with a proper door opening in order to permit clear access to these components. The door shall be dustproof, vermin proof and weather protected (IP 55) and shall be provided with suitable locking arrangement.
1.6 Mast shall be provided with lightning protection.
1.7 Mast and the electricals shall be suitably earthed. Bottom section of the mast shall have suitable studs for earth connection.

2.0 LANTERN CARRIAGE

2.1 The lantern carriage shall be of steel tubular ring type construction designed to accommodate 08 nos. of HPSV non-integral type flood light luminaires with necessary C.G. Box in a radially symmetrical fashion.
2.2 Lantern Carriage/Accessories shall be made with best steel in compliance with BS: EN 10025 FE 430 A and shall have guaranteed characteristics as per this standard.
2.3 The complete lantern carriage assembly shall be hot dip galvanized after fabrication. Galvanization shall be as per IS: 4759; minimum thickness of galvanization 80 micron.
2.4 The carriage shall have proper arrangement to avoid swing and to prevent damage to mast surface or other installed parts during lowering/raising operation of carriage.
2.5 All hardware used shall have necessary corrosion protection.

3.0 WINCH ASSEMBLY/POWER TOOL:

3.1 Winch assembly, meant for hoisting of lantern carriage, shall be a double winch and shall be fixed in the base of the mast and shall have provision to operate both manually and electrically. The winch shall be suitably designed to handle the total weight of lantern carriage assembly with all fittings and accessories with required factor of safety.
3.2 The average rate of raising and lowering shall be not less than 3 metres per minute. Initial supply of oil for winch shall be arranged by the party.
3.3 The winch shall be of self sustaining and self lubricating type with positive locking arrangement. The rope drum shall be fabricated as per IS: 807 and the wire rope shall be wound/unwound on the winch during movement of lantern carriage.

3.4 Lantern carriage shall be operated with three point (three rope) system for preventing wobbling of the carriage during raising and lowering.
3.5 The material of construction for top pulley block shall be non-corrosive and preferably made of die cast LM-6 aluminum /brass alloy with self lubricating bearing.
3.6 Design of the pulley shall be such that wire rope does not come out of the groove at any time during lowering/raising of the lantern carriage.
3.7 The design shall ensure that the operation of pulley is maintenance free. Pulley should be provided with weather proof cover. Particular care shall be exercised in all aspects of design, manufacture, and testing and installation arrangement of the system to ensure optimum safety under all operating condition to give a minimum 25 years of operating life.
Test certificates shall be provided with each winch. Offer should also state clearly the capacity, operating lubricant, speed and recommended lubricant.

4.0 WINCH DRIVING POWER UNIT:

4.1 The winch drive unit shall be squirrel cage reversible induction motor with following characteristic:
a. Supply voltage: 415 V, 3 phase, 50 HZ
b. Insulation: Class F, temperature class limited to class B
c. Class of protection: IP 55, Weather resistant
Make- Crompton Greaves/ Kirloskar Ltd./ Siemens/ Bharat Bijlee
4.2 The capacity of the electric motor used in power tool shall be compatible to handle the design load of the complete lantern carriage with luminaires (Min 2.0 HP).
4.3 Rate of raising and lowering of the mast shall be not less than 3 metres per minute.
4.4 The drive unit shall be housed at the base of the mast.
4.5 For safety reasons and final precision docking of lantern carriage ring, the power unit must have provision to be operated manually by using external crank device/lever without removing the drive motor from the winch unit. Crank device shall be provided with each high mast unit.

5.0 WIRE ROPE:

5.1 The wire ropes shall be flexible marine grade and non corrosive stainless steel grade SS 316.
5.2 A minimum 8 turn of wire rope shall be on the drum when the lantern carriage is fully lowered.
5.3 The stainless steel wire shall be minimum 6 mm diameter, 7x19 constructions which shall have a factor of safety not less than 5 times the safe working load (SFL) of winch.

6.0 CONTROL PANEL (FEEDER PILLAR BOX):

A feeder pillar box made of 2mm/14 SWG CRCA sheet metal, self supporting, floor mounted, dust, vermin and weather proof for outdoor use shall be supplied for locally/automatically switching ON/OFF of luminaires. The control panel shall comprise the following:
6.1 Incomer- 01 no., 415 V, 63 Amp, 4 pole MCCB. Make: GE/Siemens/Schneider /Legrand/ABB
6.2 Earth leakage Relay with separate core balance current transformer. Sensitivity: 30 mA to 3A, Time delay: 0 - 5 sec., current and time setting adjustable in steps. Make: Schneider/Legrand
6.3 Isolator MCCB 40 Amps, 4 P, as isolator- 02 nos., one each for motor starter and luminaires Make: Legrand/Schneider/Siemens/GE/ABB
6.4 Light controller- 01 no. Triple pole power contactor AC3 rating min. 40 A rating for long

life
Make: Legrand/Schneider/Siemens/GE/L & T
6.5 Triple pole power contactor AC3 rating min. 16 A- 02 nos., rated for motor hoisting and lowering
Make: Legrand/Schneider/Siemens/GE/L & T
6.6 Digital Voltmeter & Ammeter, size-96mm X 96mm, Range 0-600V, Current transformer with CT
Ratio-50/5 Make- Conzerv /AEI Ltd.
6.7 LED indication lights- 3 nos. for R,Y,B phase indication, make: Binay/Schneider
6.8 Start/Stop push button for locally switching ON/OFF the luminaires - 1 set.
6.9 Separate TBs of suitable sizes for incomer cable, outgoing motor and luminaire cable and control cables shall be used.
6.10 NS 4 type fuses carrier and base shall be used for control circuit protection.
6.11 Automatic light switch with digital time switch, DIN rail mounted, suitable for astronomical calculations of sunrise and sunset during summer/winter by setting date, time and positions of longitude and latitude, model-Astro Rex-D21 of Legrand, astro-time -switch, 240V AC, 50HZ, Make- Legrand/ Merlin Gerin
6.12 All power and control wiring shall be done with single core, 1100 V grade PVC insulated, IS marked, flexible copper cable. Power cable size shall be as per IS: 8623, control cable 2.5 Sq. mm.
6.13 Brought out terminals/spreader bars of tinned copper shall be provided at incomer MCCB for terminating 4x25 Sq. mm PVCA cable. All outgoing connections from the incomer MCCB shall be tapped through suitable rectangular copper bars.
6.14 Detachable gland plate and copper brought out terminals for incoming and outgoing cable connection shall be provided. Suitable single compression metallic glands for the luminaire and motor cables shall be provided in the feeder pillar.
6.15 Feeder Pillar box is to be painted with by 2 coats of primer followed by epoxy grey paint.
6.16 Push button for raising and lowering the mobile part shall operate on "Dead man principle" i.e. action shall cease as soon as the button is released.
6.17 The height of foundation for panel shall be min. 450 mm from the ground level. Also, the gland plate of the feeder pillar shall be at a height of minimum 450 mm from foundation level.
6.18 Feeder Pillar should be located at min. 5 metres radial distance from the high mast.
GA and Single line diagram of the feeder pillar shall be submitted with the offer.

7.0 LUMINAIRES:

Eight nos. non-integral type, double flood light luminaries with IP 65 protection similar to SNT 001 of Philips make, complete with 2X 400 W HPSV tubular lamps and external control gear box with all accessories shall be used in the mast. Proper sized single compression cable glands (Nickel plated SS/brass material) shall be used for glanding of all cables at both ends. Cast aluminium alloy control gear box shall be complete with electro-magnetic ballast, ignitor, PF correction capacitor and individual HRC fuses.
Make of Luminaires shall be restricted to: PHILIPS/CROMPTON/BAJAJ/GE.

2 nos. 4 core, 6 sq. mm, copper conductor, flexible copper screened, EPR insulated and PVC/PCP sheathed, 1100V grade, Make- Nicco/ Incab /Polycab /Finolex/CCI/Universal/KEC (RPG)/ Ankur/Radiant/NECAB shall be used from the mast terminal block to the lantern carriage. Terminal block shall be covered to protect it from the entry of insects and dust particles.

8.0 EARTHlNG:

The mast shall be provided with suitable body earthing and lightning protection system. Mast shall have suitable earth boss (terminal) for 30 x 6 GI strap earth connections. The complete earthing system shall comprise the following:
8.1 50 mm dia, 3 metre Long G.I. Pipe earth electrodes with brick enclosure and cover – 4 Nos.
8.2 30 mm X 6 mm G.I. straps for earth connection of the mast at the studs (from studs to earth electrodes)
Out of the four electrodes, 2 nos. electrodes shall be used for lightning protection and 2 nos. electrodes shall be used for earthing of the feeder pillar and luminaires/motor.

9.0 TOOL BOX:

A tool box of sheet steel containing a set of general and special purpose tools is to be supplied along with high mast for maintenance job.

10.0 AVIATION OBSTRUCTION WARNING LIGHTS & LIGHTNING ARRESTOR:

10.1 02 (two) nos. medium intensity LED flasher type red aviation obstruction light fitted in a weather- proof box on body unit of Aluminium alloy shall be supplied with each mast system. The cover of the light will be glass with rubber gasket (IP 65 protection). The light fitting shall have integral terminal chamber. LEDs are to be mounted on fire retardant epoxy printed circuit board.
10.2 Light fittings shall be suitable for 240V AC, 50 Hz supply. Luminous intensity of the lamp shall be minimum 90 candela. Unit shall be similar to Baliga luminaire model: AW300. Make- Binay/Bajaj/ Philips/Baliga.
10.3 Lightning protection rod (lightning finial, GI/copper, 1 m length) shall be provided and fixed rigidly on the top of the high mast.

11.0 FOUNDATION:

11.1 Foundation of high mast shall be suitable for Zone V considering the Earth Quake resistance measure and party shall have to furnish the design of the foundation of High mast along with the offer. Design shall be approved by OIL before acceptance of offer.
11.2 The bearing capacity of the soil is 10 T/m2.

12.0 SCOPE OF SUPPLY AND INSTALLATION:

Supply of complete High mast Lighting System shall include:
(a) Supply of 20 m high mast structure with lantern carriage raising/lowering mechanism
(b) Supply of flood light fixtures & lamps of quantity and capacity specified
(c) Supply of aviation obstruction warning lights
(d) Supply of lightning arrestor for each light mast
(e) Supply of power & control cables as required for power distribution from feeder pillar to all light fittings of each mast (Only cable from source/sub-station to light mast feeder pillar shall be supplied and laid by OIL. All other cabling works required for high mast are in the scope of the contractor).
(f) Supply of feeder pillar boards
(g) Supply of earth electrodes, GI straps
(h) Supply of all materials for four earth pits for each mast

Installation and commissioning jobs shall include:

(a) Installation, testing & commissioning of the complete light masts with all items and accessories including feeder pillars (b) All cabling works from feeder pillar to mast/power tool/luminaires (c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits 16.0 PRE-DESPATCH INSPECTION & TESTING: High mast systems, complete with feeder pillar and light fittings, will be inspected and tested by OIL's representative at the works/premises of supplier/OEM before dispatch. Modification/correction suggested by the OIL inspector for better operation and ease of maintenance of the high mast system shall be carried out by the supplier without any extra cost to OIL. All charges towards pre-despatch inspection and testing shall be included in the offer. However, to and fro charges of OIL's personnel to suppliers /manufacturer's works will be to OIL's account.	
ITEM NO. 40, INSTALLATION & COMMISSIONING OF ITEM NO. 30, (QNTY. – 1 AU) Installation and commissioning jobs shall include: (a) Installation, testing & commissioning of the complete light masts including feeder pillars (b) All cabling works from feeder pillar to mast/power tool/luminaires (c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits.	
ITEM NO. 50, HIGH MAST 20M, (QNTY. – 1 NO.) Technical Specification same as item no. 30	
ITM NO. 60, INSTALLATION & COMMISSIONING OF ITEM NO. 50, (QNTY. – 1 AU) Technical Specification same as item no. 40	
ITEM NO. 70, HIGH MAST 30M, (QNTY. – 3 NOS.) Supply, erection, testing & commissioning of 30 meter tall High mast Lighting system with 12 nos. of 2 x 400 watt SON fittings with Non integral control gear box. Details of specifications are given below: **Annexure-1** TECHNICAL SPECIFICATIONS OF 30 MTRS HIGH MAST LIGHTING SYSTEM 1.0 MAST: 1.1 The high mast shall be continuously tapered, polygonal cross section and 30 meters high	

above base plate. The mast shall be fabricated from steel plate welded polygonal construction in suitable number of sections, (not less than 2)telescopically jointed giving a continuous tapered profile and presenting good visual appearance.
The mast shaft shall be made with best steel in compliance with BS: EN 10025 FE 510 and shall have guaranteed characteristics conforming to this standard.
1.2 Material of the mast sections shall conform to IS: 2062. The mast sections shall be hot dip galvanized to minimum 80 micron both inside and outside conforming to IS: 4759-1984, IS: 2629-1985, IS: 2633-1072.
1.3 Mast structure shall be designed to withstand wind velocity of 180km/hr. with 3 sec. gust at a height of 10 m above ground level conforming IS: 875 part III - 1987 and should have wind load factor 1.25 and material factor 1.15.
1.4 The base flange shall be provided with gusset and high tensile anchor bolts.
1.5 The bottom most section shall accommodate winch electric drive, cable, plug/socket etc. with a proper door opening in order to permit clear access to these components. The door shall be dustproof, vermin proof and weather protected (IP 55) and shall be provided with suitable locking arrangement.
1.6 Mast shall be provided with lightning protection.
1.7 Mast and the electricals shall be suitably earthed. Bottom section of the mast shall have suitable studs for earth connection.

2.0 LANTERN CARRIAGE

2.1 The lantern carriage shall be of steel tubular ring type construction designed to accommodate 12 nos. of HPSV non-integral type flood light luminaires with necessary C.G. Box in a radially symmetrical fashion.
2.2 Lantern Carriage/Accessories shall be made with best steel in compliance with BS: EN 10025 FE 430 A and shall have guaranteed characteristics as per this standard.
2.3 The complete lantern carriage assembly shall be hot dip galvanized after fabrication. Galvanization shall be as per IS: 4759; minimum thickness of galvanization 80 micron.
2.4 The carriage shall have proper arrangement to avoid swing and to prevent damage to mast surface or other installed parts during lowering/raising operation of carriage.
2.5 All hardware used shall have necessary corrosion protection.

3.0 WINCH ASSEMBLY/POWER TOOL:

3.1 Winch assembly, meant for hoisting of lantern carriage, shall be a double winch and shall be fixed in the base of the mast and shall have provision to operate both manually and electrically. The winch shall be suitably designed to handle the total weight of lantern carriage assembly with all fittings and accessories with required factor of safety.
3.2 The average rate of raising and lowering shall be not less than 3 metres per minute. Initial supply of oil for winch shall be arranged by the party.
3.3 The winch shall be of self sustaining and self lubricating type with positive locking arrangement. The rope drum shall be fabricated as per IS: 807 and the wire rope shall be wound/unwound on the winch during movement of lantern carriage.
3.4 Lantern carriage shall be operated with three point (three rope) system for preventing wobbling of the carriage during raising and lowering.
3.5 The material of construction for top pulley block shall be non-corrosive and preferably made of die cast LM-6 aluminum /brass alloy with self lubricating bearing.
3.6 Design of the pulley shall be such that wire rope does not come out of the groove at any time during lowering/raising of the lantern carriage.
3.7 The design shall ensure that the operation of pulley is maintenance free. Pulley should be

provided with weather proof cover. Particular care shall be exercised in all aspects of design, manufacture, and testing and installation arrangement of the system to ensure optimum safety under all operating condition to give a minimum 25 years of operating life.
Test certificates shall be provided with each winch. Offer should also state clearly the capacity, operating lubricant, speed and recommended lubricant.

4.0 WINCH DRIVING POWER UNIT:

4.1 The winch drive unit shall be squirrel cage reversible induction motor with following characteristic:
a. Supply voltage: 415 V, 3 phase, 50 HZ
b. Insulation: Class F, temperature class limited to class B
c. Class of protection: IP 55, Weather resistant
Make- Crompton Greaves/ Kirloskar Ltd./ Siemens/ Bharat Bijlee
4.2 The capacity of the electric motor used in power tool shall be compatible to handle the design load of the complete lantern carriage with luminaires (Min 2.0 HP).
4.3 Rate of raising and lowering of the mast shall be not less than 3 metres per minute.
4.4 The drive unit shall be housed at the base of the mast.
4.5 For safety reasons and final precision docking of lantern carriage ring, the power unit must have provision to be operated manually by using external crank device/lever without removing the drive motor from the winch unit. Crank device shall be provided with each high mast unit.

5.0 WIRE ROPE:

5.1 The wire ropes shall be flexible marine grade and non corrosive stainless steel grade SS 316.
5.2 A minimum 8 turn of wire rope shall be on the drum when the lantern carriage is fully lowered.
5.3 The stainless steel wire shall be minimum 6 mm diameter, 7x19 constructions which shall have a factor of safety not less than 5 times the safe working load (SFL) of winch.

6.0 CONTROL PANEL (FEEDER PILLAR BOX):

A feeder pillar box made of 2mm/14 SWG CRCA sheet metal, self supporting, floor mounted, dust, vermin and weather proof for outdoor use shall be supplied for locally/automatically switching ON/OFF of luminaires. The control panel shall comprise the following:
6.1 Incomer- 01 no., 415 V, 63 Amp, 4 pole MCCB. Make: GE/Siemens/Havell/Telemecanique /Legrand
6.2 Earth leakage Relay with separate core balance current transformer. Sensitivity: 30 mA to 3A, Time delay: 0 - 5 sec., current and time setting adjustable in steps. Make: Merlin Gerlin/Legrand
6.3 Isolator MCCB 40 Amps, 4 P, as isolator- 02 nos., one each for motor starter and luminaires
Make: Legrand/Telemecanique/Siemens/GE/Havell
6.4 Light controller- 01 no. Triple pole power contactor AC3 rating min. 40 A rating for long life
Make: Legrand/Telemecanique/Siemens/GE/Havell
6.5 Triple pole power contactor AC3 rating min. 16 A- 02 nos., rated for motor hoisting and lowering
Make: Legrand/Telemecanique/Siemens/GE/Havell
6.6 Digital Voltmeter & Ammeter, size-96mm X 96mm, Range 0-600V, Current transformer with CT

Ratio-50/5 Make- Conzerv /AEI Ltd.
6.7 LED indication lights- 3 nos. for R,Y,B phase indication, make: Binay/Telemecanique
6.8 Start/Stop push button for locally switching ON/OFF the luminaires - 1 set.
6.9 Separate TBs of suitable sizes for incomer cable, outgoing motor and luminaire cable and control cables shall be used.
6.10 NS 4 type fuses carrier and base shall be used for control circuit protection.
6.11 Automatic light switch with digital time switch, DIN rail mounted, suitable for astronomical calculations of sunrise and sunset during summer/winter by setting date, time and positions of longitude and latitude, model-Astro Rex-D21 of Legrand, astro-time -switch, 240V AC, 50HZ, Make- Legrand/ Merlin Gerin
6.12 All power and control wiring shall be done with single core, 1100 V grade PVC insulated, IS marked, flexible copper cable. Power cable size shall be as per IS: 8623, control cable 2.5 Sq. mm.
6.13 Brought out terminals/spreader bars of tinned copper shall be provided at incomer MCCB for terminating 4x25 Sq. mm PVCA cable. All outgoing connections from the incomer MCCB shall be tapped through suitable rectangular copper bars.
6.14 Detachable gland plate and copper brought out terminals for incoming and outgoing cable connection shall be provided. Suitable single compression metallic glands for the luminaire and motor cables shall be provided in the feeder pillar.
6.15 Feeder Pillar box is to be painted with by 2 coats of primer followed by epoxy grey paint.
6.16 Push button for raising and lowering the mobile part shall operate on "Dead man principle" i.e. action shall cease as soon as the button is released.
6.17 The height of foundation for panel shall be min. 450 mm from the ground level. Also, the gland plate of the feeder pillar shall be at a height of minimum 450 mm from foundation level.
6.18 Feeder Pillar should be located at min. 5 meters radial distance from the high mast.
GA and Single line diagram of the feeder pillar shall be submitted with the offer.

7.0 LUMINAIRES:

Twelve nos. non-integral type, double flood light luminaries with IP 65 protection similar to SNT 001 of Philips make, complete with 2X 400 W HPSV tubular lamps and external control gear box with all accessories shall be used in the mast. Proper sized single compression cable glands (Nickel plated SS/brass material) shall be used for glanding of all cables at both ends. Cast aluminium alloy control gear box shall be complete with electro-magnetic ballast, ignitor, PF correction capacitor and individual HRC fuses.
Make of Luminaires shall be restricted to: PHILIPS/CROMPTON/BAJAJ/GE.

2 nos. 4 core, 6 sq. mm, copper conductor, flexible copper screened, EPR insulated and PVC/PCP sheathed cable, 1100V grade, Make- Nicco/ Incab /Polycab /Finolex/CCI/Universal/KEC (RPG)/ Ankur/Radiant/NECAB shall be used from the mast terminal block to the lantern carriage. Terminal block shall be covered to protect it from the entry of insects and dust particles.

8.0 EARTHlNG:

The mast shall be provided with suitable body earthing and lightning protection system. Mast shall have suitable earth boss (terminal) for 30 x 6 GI strap earth connections. The complete earthing system shall comprise the following:
8.1 50 mm dia, 3 metre Long G.I. Pipe earth electrodes with brick enclosure and cover – 4 Nos.
8.2 30 mm X 6 mm G.I. straps for earth connection of the mast at the studs (from studs to earth electrodes)

Out of the four electrodes, 2 nos. electrodes shall be used for lightning protection and 2 nos. electrodes shall be used for earthing of the feeder pillar and luminaires/motor.

9.0 TOOL BOX:

A tool box of sheet steel containing a set of general and special purpose tools is to be supplied along with high mast for maintenance job.

10.0 AVIATION OBSTRUCTION WARNING LIGHTS & LIGHTNING ARRESTOR:

10.1 02 (two) nos. medium intensity LED flasher type aviation obstruction light fitted in a weather- proof box on body unit of Aluminium alloy shall be supplied with each mast system. The cover of the light will be glass with rubber gasket (IP 65 protection). The light fitting shall have integral terminal chamber. LEDs are to be mounted on fire retardant epoxy printed circuit board.
10.2 Light fittings shall be suitable for 240V AC, 50 Hz supply. Luminous intensity of the lamp shall be minimum 90 candela. Unit shall be similar to Baliga luminaire model: AW300. Make- Binay/Bajaj/ Philips/Baliga.
10.3 Lightning protection rod (lightning finial, GI/copper, 1 m length) shall be provided and fixed rigidly on the top of the high mast.

11.0 FOUNDATION:

11.1 Foundation of high mast shall be suitable for Zone V considering the Earth Quake resistance measure and party shall have to furnish the design of the foundation of High mast along with the offer. Design shall be approved by OIL before acceptance of offer.
11.2 The bearing capacity of the soil is 10 T/m2.

12.0 SCOPE OF SUPPLY AND INSTALLATION:

Supply of complete High mast Lighting System shall include:
(a) Supply of 30 m high mast structure with lantern carriage raising/lowering mechanism
(b) Supply of flood light fixtures & lamps of quantity and capacity specified
(c) Supply of aviation obstruction warning lights
(d) Supply of lightning arrestor for each light mast
(e) Supply of power & control cables as required for power distribution from feeder pillar to all light fittings of each mast (Only cable from source/sub-station to light mast feeder pillar shall be supplied and laid by OIL. All other cabling works required for high mast are in the scope of the contractor).
(f) Supply of feeder pillar boards
(g) Supply of earth electrodes, GI straps
(h) Supply of all materials for four earth pits for each mast

Installation and commissioning jobs shall include:
(a) Installation, testing & commissioning of the complete light masts with all items and accessories including feeder pillars
(b) All cabling works from feeder pillar to mast/power tool/luminaires
(c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits.

16.0 PRE-DESPATCH INSPECTION & TESTING:

High mast systems, complete with feeder pillar and light fittings, will be inspected and tested by OIL's representative at the works/premises of supplier/OEM before dispatch. Modification/correction suggested by the OIL inspector for better operation and ease of maintenance of the high mast system shall be carried out by the supplier without any extra cost to OIL. All charges towards pre-despatch inspection and testing shall be included in the offer. However, to and fro charges of OIL's personnel to suppliers /manufacturer's works will be to OIL's account.

ITEM NO. 80, INSTALLATION & COMMISSIONING OF ITEM NO. 70, (QNTY. – 1 AU)

Installation and commissioning jobs shall include:
(a) Installation, testing & commissioning of the complete light masts including feeder pillars
(b) All cabling works from feeder pillar to mast/power tool/luminaires
(c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits

ITEM NO. 90, HIGH MAST 30M, (QNTY. – 6 NOS.)

Technical Specification same as item no. 70.

ITEM NO. 100, INSTALLATION & COMMISSIONING OF ITEM NO. 90, (QNTY. – 1 AU)

Technical Specification same as item no. 80.

ITEM NO. 110, HIGH MAST 20M, (QNTY. – 1 NO.)

Supply, erection, testing & commissioning of 20 meter tall High mast Lighting system with 8 nos. of 2 x 400 watt SON fittings with Non integral control gear box. Details of specifications are given below:

ANNEXURE-1

TECHNICAL SPECIFICATIONS OF 20 MTRS HIGH MAST LIGHTING SYSTEM

1.0 MAST:

1.1 The high mast shall be continuously tapered, polygonal cross section and 20 meters high above base plate. The mast shall be fabricated from steel plate welded polygonal construction in suitable number of sections (not less than 2), telescopically jointed giving a continuous tapered profile and presenting good visual appearance.
The mast shaft shall be made with best steel in compliance with BS: EN 10025 FE 510 and shall have guaranteed characteristics conforming to this standard.
1.2 Material of the mast sections shall conform to IS: 2062. The mast sections shall be hot dip

galvanized to minimum 80 micron both inside and outside conforming to IS: 4759-1984, IS: 2629-1985, IS: 2633-1072.
1.3 Mast structure shall be designed to withstand wind velocity of 180km/hr. with 3 sec. gust at a height of 10 m above ground level conforming IS: 875 part III - 1987 and should have wind load factor 1.25 and material factor 1.15.
1.4 The base flange shall be provided with gusset and high tensile anchor bolts.
1.5 The bottom most section shall accommodate winch electric drive, cable, plug/socket etc. with a proper door opening in order to permit clear access to these components. The door shall be dustproof, vermin proof and weather protected (IP 55) and shall be provided with suitable locking arrangement.
1.6 Mast shall be provided with lightning protection.
1.7 Mast and the electricals shall be suitably earthed. Bottom section of the mast shall have suitable studs for earth connection.

2.0 LANTERN CARRIAGE

2.1 The lantern carriage shall be of steel tubular ring type construction designed to accommodate 08 nos. of HPSV non-integral type flood light luminaires with necessary C.G. Box in a radially symmetrical fashion.
2.2 Lantern Carriage/Accessories shall be made with best steel in compliance with BS: EN 10025 FE 430 A and shall have guaranteed characteristics as per this standard.
2.3 The complete lantern carriage assembly shall be hot dip galvanized after fabrication. Galvanization shall be as per IS: 4759; minimum thickness of galvanization 80 micron.
2.4 The carriage shall have proper arrangement to avoid swing and to prevent damage to mast surface or other installed parts during lowering/raising operation of carriage.
2.5 All hardware used shall have necessary corrosion protection.

3.0 WINCH ASSEMBLY/POWER TOOL:

3.1 Winch assembly, meant for hoisting of lantern carriage, shall be a double winch and shall be fixed in the base of the mast and shall have provision to operate both manually and electrically. The winch shall be suitably designed to handle the total weight of lantern carriage assembly with all fittings and accessories with required factor of safety.
3.2 The average rate of raising and lowering shall be not less than 3 metres per minute. Initial supply of oil for winch shall be arranged by the party.
3.3 The winch shall be of self sustaining and self lubricating type with positive locking arrangement. The rope drum shall be fabricated as per IS: 807 and the wire rope shall be wound/unwound on the winch during movement of lantern carriage.
3.4 Lantern carriage shall be operated with three point (three rope) system for preventing wobbling of the carriage during raising and lowering.
3.5 The material of construction for top pulley block shall be non-corrosive and preferably made of die cast LM-6 aluminum /brass alloy with self lubricating bearing.
3.6 Design of the pulley shall be such that wire rope does not come out of the groove at any time during lowering/raising of the lantern carriage.
3.7 The design shall ensure that the operation of pulley is maintenance free. Pulley should be provided with weather proof cover. Particular care shall be exercised in all aspects of design, manufacture, and testing and installation arrangement of the system to ensure optimum safety under all operating condition to give a minimum 25 years of operating life.
Test certificates shall be provided with each winch. Offer should also state clearly the capacity, operating lubricant, speed and recommended lubricant.

4.0 WINCH DRIVING POWER UNIT:

4.1 The winch drive unit shall be squirrel cage reversible induction motor with following characteristic:
a. Supply voltage: 415 V, 3 phase, 50 HZ
b. Insulation: Class F, temperature class limited to class B
c. Class of protection: IP 55, Weather resistant
Make- Crompton Greaves/ Kirloskar Ltd./ Siemens/ Bharat Bijlee
4.2 The capacity of the electric motor used in power tool shall be compatible to handle the design load of the complete lantern carriage with luminaires (Min 2.0 HP).
4.3 Rate of raising and lowering of the mast shall be not less than 3 metres per minute.
4.4 The drive unit shall be housed at the base of the mast.
4.5 For safety reasons and final precision docking of lantern carriage ring, the power unit must have provision to be operated manually by using external crank device/lever without removing the drive motor from the winch unit. Crank device shall be provided with each high mast unit.

5.0 WIRE ROPE:

5.1 The wire ropes shall be flexible marine grade and non corrosive stainless steel grade SS 316.
5.2 A minimum 8 turn of wire rope shall be on the drum when the lantern carriage is fully lowered.
5.3 The stainless steel wire shall be minimum 6 mm diameter, 7x19 constructions which shall have a factor of safety not less than 5 times the safe working load (SFL) of winch.

6.0 CONTROL PANEL (FEEDER PILLAR BOX):

A feeder pillar box made of 2mm/14 SWG CRCA sheet metal, self supporting, floor mounted, dust, vermin and weather proof for outdoor use shall be supplied for locally/automatically switching ON/OFF of luminaires. The control panel shall comprise the following:
6.1 Incomer- 01 no., 415 V, 63 Amp, 4 pole MCCB. Make: GE/Siemens/Schneider /Legrand/ABB
6.2 Earth leakage Relay with separate core balance current transformer. Sensitivity: 30 mA to 3A, Time delay: 0 - 5 sec., current and time setting adjustable in steps. Make: Schneider/Legrand
6.3 Isolator MCCB 40 Amps, 4 P, as isolator- 02 nos., one each for motor starter and luminaires
Make: Legrand/Schneider/Siemens/GE/ABB
6.4 Light controller- 01 no. Triple pole power contactor AC3 rating min. 40 A rating for long life
Make: Legrand/Schneider/Siemens/GE/L & T
6.5 Triple pole power contactor AC3 rating min. 16 A- 02 nos., rated for motor hoisting and lowering
Make: Legrand/Schneider/Siemens/GE/L & T
6.6 Digital Voltmeter & Ammeter, size-96mm X 96mm, Range 0-600V, Current transformer with CT
Ratio-50/5 Make- Conzerv /AEI Ltd.
6.7 LED indication lights- 3 nos. for R,Y,B phase indication, make: Binay/Schneider
6.8 Start/Stop push button for locally switching ON/OFF the luminaires - 1 set.
6.9 Separate TBs of suitable sizes for incomer cable, outgoing motor and luminaire cable and control cables shall be used.
6.10 NS 4 type fuses carrier and base shall be used for control circuit protection.

6.11 Automatic light switch with digital time switch, DIN rail mounted, suitable for astronomical calculations of sunrise and sunset during summer/winter by setting date, time and positions of longitude and latitude, model-Astro Rex-D21 of Legrand, astro-time -switch, 240V AC, 50HZ, Make- Legrand/ Merlin Gerin
6.12 All power and control wiring shall be done with single core, 1100 V grade PVC insulated, IS marked, flexible copper cable. Power cable size shall be as per IS: 8623, control cable 2.5 Sq. mm.
6.13 Brought out terminals/spreader bars of tinned copper shall be provided at incomer MCCB for terminating 4x25 Sq. mm PVCA cable. All outgoing connections from the incomer MCCB shall be tapped through suitable rectangular copper bars.
6.14 Detachable gland plate and copper brought out terminals for incoming and outgoing cable connection shall be provided. Suitable single compression metallic glands for the luminaire and motor cables shall be provided in the feeder pillar.
6.15 Feeder Pillar box is to be painted with by 2 coats of primer followed by epoxy grey paint.
6.16 Push button for raising and lowering the mobile part shall operate on "Dead man principle" i.e. action shall cease as soon as the button is released.
6.17 The height of foundation for panel shall be min. 450 mm from the ground level. Also, the gland plate of the feeder pillar shall be at a height of minimum 450 mm from foundation level.
6.18 Feeder Pillar should be located at min. 5 metres radial distance from the high mast.
GA and Single line diagram of the feeder pillar shall be submitted with the offer.

7.0 LUMINAIRES:

Eight nos. non-integral type, double flood light luminaries with IP 65 protection similar to SNT 001 of Philips make, complete with 2X 400 W HPSV tubular lamps and external control gear box with all accessories shall be used in the mast. Proper sized single compression cable glands (Nickel plated SS/brass material) shall be used for glanding of all cables at both ends. Cast aluminium alloy control gear box shall be complete with electro-magnetic ballast, ignitor, PF correction capacitor and individual HRC fuses.
Make of Luminaires shall be restricted to: PHILIPS/CROMPTON/BAJAJ/GE.

2 nos. 4 core, 6 sq. mm, copper conductor, flexible copper screened, EPR insulated and PVC/PCP sheathed, 1100V grade, Make- Nicco/ Incab /Polycab /Finolex/CCI/Universal/KEC (RPG)/ Ankur/Radiant/NECAB shall be used from the mast terminal block to the lantern carriage. Terminal block shall be covered to protect it from the entry of insects and dust particles.

8.0 EARTHlNG:

The mast shall be provided with suitable body earthing and lightning protection system. Mast shall have suitable earth boss (terminal) for 30 x 6 GI strap earth connections. The complete earthing system shall comprise the following:
8.1 50 mm dia, 3 metre Long G.I. Pipe earth electrodes with brick enclosure and cover – 4 Nos.
8.2 30 mm X 6 mm G.I. straps for earth connection of the mast at the studs (from studs to earth electrodes)
Out of the four electrodes, 2 nos. electrodes shall be used for lightning protection and 2 nos. electrodes shall be used for earthing of the feeder pillar and luminaires/motor.

9.0 TOOL BOX:

A tool box of sheet steel containing a set of general and special purpose tools is to be supplied

along with high mast for maintenance job.

10.0 AVIATION OBSTRUCTION WARNING LIGHTS & LIGHTNING ARRESTOR:

10.1 02 (two) nos. medium intensity LED flasher type red aviation obstruction light fitted in a weather- proof box on body unit of Aluminium alloy shall be supplied with each mast system. The cover of the light will be glass with rubber gasket (IP 65 protection). The light fitting shall have integral terminal chamber. LEDs are to be mounted on fire retardant epoxy printed circuit board.
10.2 Light fittings shall be suitable for 240V AC, 50 Hz supply. Luminous intensity of the lamp shall be minimum 90 candela. Unit shall be similar to Baliga luminaire model: AW300. Make- Binay/Bajaj/ Philips/Baliga.
10.3 Lightning protection rod (lightning finial, GI/copper, 1 m length) shall be provided and fixed rigidly on the top of the high mast.

11.0 FOUNDATION:

11.1 Foundation of high mast shall be suitable for Zone V considering the Earth Quake resistance measure and party shall have to furnish the design of the foundation of High mast along with the offer. Design shall be approved by OIL before acceptance of offer.
11.2 The bearing capacity of the soil is 10 T/m2.

12.0 SCOPE OF SUPPLY AND INSTALLATION:

Supply of complete High mast Lighting System shall include:
(a) Supply of 20 m high mast structure with lantern carriage raising/lowering mechanism
(b) Supply of flood light fixtures & lamps of quantity and capacity specified
(c) Supply of aviation obstruction warning lights
(d) Supply of lightning arrestor for each light mast
(e) Supply of power & control cables as required for power distribution from feeder pillar to all light fittings of each mast (Only cable from source/sub-station to light mast feeder pillar shall be supplied and laid by OIL. All other cabling works required for high mast are in the scope of the contractor).
(f) Supply of feeder pillar boards
(g) Supply of earth electrodes, GI straps
(h) Supply of all materials for four earth pits for each mast

Installation and commissioning jobs shall include:
(a) Installation, testing & commissioning of the complete light masts with all items and accessories including feeder pillars
(b) All cabling works from feeder pillar to mast/power tool/luminaires
(c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits

16.0 PRE-DESPATCH INSPECTION & TESTING:

High mast systems, complete with feeder pillar and light fittings, will be inspected and tested by OIL's representative at the works/premises of supplier/OEM before dispatch. Modification/correction suggested by the OIL inspector for better operation and ease of maintenance of the high mast system shall be carried out by the supplier without any extra cost to OIL. All charges towards pre-despatch inspection and testing shall be included in the offer.

However, to and fro charges of OIL's personnel to suppliers /manufacturer's works will be to OIL's account.	
ITEM NO. 120, INSTALLATION & COMMISSIONING OF ITEM NO. 110, (QNTY. – 1 AU) Installation and commissioning jobs shall include: (a) Installation, testing & commissioning of the complete light masts including feeder pillars (b) All cabling works from feeder pillar to mast/power tool/luminaires (c) Making of earth pits as per IS: 3043, laying and connection of earth straps from mast and feeder pillar to earth pits	
ITEM NO. 130, HIGH MAST 20M, (QNTY. – 1 NO.) Technical Specification same as item no. 110.	
ITEM NO. 140, INSTALLATION & COMMISSIONING OF ITEM NO. 130, (QNTY. – 1 AU) Technical Specification same as item no. 120.	
TECHNICAL NOTES: 13.1 Feeder pillar drawings (GA drawing, electrical single line diagram, wiring diagram, component layout diagram etc.) shall be scrutinized by OIL. Any modification suggested by OIL shall be incorporated in the design and fresh set of drawings shall be submitted for OIL's approval. Manufacturing of the panel shall be started only after due approval from OIL. Feeder pillar manufactured without OIL's approval shall not be accepted. 13.2 The following drawings shall be checked and verified by OIL before acceptance of offer. a) RCC foundation details (suitable for Zone V): 1 set b) Design calculations of foundation of high mast: 1 set c) Design calculation of high mast: 1 set 13.3 All components shall be designed to require minimum of maintenance and skilled attention and also to allow routine maintenance to be carried out quickly and easily with a minimum use of tools. 13.4 High mast should be designed to have maintenance free life of 25 years against any manufacturing / design defects. 13.5 Every reasonable precaution and provision shall be incorporated in the design of the equipment for the safety and security of the system and of those concerned with its operation and maintenance. 13.6 Heat resisting cable shall be used between lamp holders and circuit connection points. 13.7 The electrical installation job shall comply with all appropriate statutory requirements, rules, regulations, standards and practices. 13.8 All metal work including luminaires, control gear units and luminaire carriage shall be bonded to the earth core of the luminaire supply cable. The earth continuity from luminaire carriage shall be via a single core of the multi-core cable. 13.9 Verticality and straightness measurement shall be carried out and these should be within	

the limits as specified by manufacturer for wind velocity, earthquake zone mentioned in Tender. 13.10 After completion of installation and commissioning job, supplier/commissioning personnel shall arrange an on-site training to workpersons of OIL on electrical and mechanical operation and maintenance of the high mast units. However, no extra charge will be payable for the same.	
GENERAL CONDITIONS: 14.1 Any deviation from OIL specifications shall be clearly spelled out along with the offer. OIL may or may not accept the deviation and party shall have to make amendments in their offer accordingly. 14.2 Complete supply, erection, testing and commissioning, including civil foundation jobs shall be done by the supplier. Civil jobs of the foundation of the high mast shall be done by the party after approval of foundation drawings by OIL. All the materials for foundation shall be supplied by the party including metallic items like site bolts, anchor plate, steel template etc. Curing time and treatment for foundation shall be as directed by OIL before start of foundation work. 14.3 Party shall make its own arrangement for board and lodging of their working personnel. 14.4 Transportation of men and materials to the site will be party's responsibility. 14.5 All necessary arrangements for erection of mast are to be made by the party including supply of all safety appliances and tools to workmen. The party will be responsible for their tools, tackles, materials and personnel at site till the high mast units are finally handed over to OIL. 14.6 Persons deployed/ authorized by the party to carry out electrical works should have valid electrical supervising license and work permit as per CEA Regulations. Copies of the licenses/permits are to be submitted along with the offer. 14.7 The party should submit detailed schedule of program of work within 15 days from the award of order. 14.8 The party will take all safety measures during the execution of the work. OIL will not be responsible in any way and shall not be liable to compensate the party in any way for any loss of party's men and material. 14.9 If due to improper execution of the work or due to negligence on the part of the party's workmen, OIL's property is damaged, the party will compensate for such loss. 14.10 The party will submit total 6 (six) sets of operation and maintenance instruction manuals of the mast including electrical items after successful commissioning of the units. 14.11 All the works shall be carried out as per relevant codes, practices rules and regulations. The workmanship shall be of very high standard. 14.12 The work shall be carried out under direct supervision of the party. The party shall submit weekly/monthly progress report of work to the Engineer-in-charge in writing.	
DOCUMENTS TO BE SUBMITTED WITH THE OFFER: The following credentials and test certificates shall be submitted with the offer. Offers without these documents are liable to be outright rejected. Technical documents: 15.1 RCC foundation details (suitable for Zone V): 1 set 15.2 Design calculations of foundation of high mast: 1 set 15.3 Design calculation of high mast: 1 set	

15.4 Complete catalogue of high mast with luminaires and aviation light: 1 set 15.5 Detailed dimensional drawing of the complete mast including the dimensional details of base door opening, the distance from the mast flange plate to the bottom of the door, head frame assembly complete with pulley, guides, ropes, covering to stop access of birds or other objects/rains etc. 15.6 General Arrangement (GA) drawing of feeder pillar: 1 set 15.7 Electrical single line diagram, wiring diagram, component layout diagram of Feeder Pillar: 1 set 15.8 Illumination level chart: 1 set 15.9 Quality Assurance Plan for High mast shaft and accessories: 1 set 15.10 Separate test certificate of the drum winch 15.11 Supplier's Test Certificate for each reel of wire rope 15.12 Test certificate as per the relevant Standards of chemical composition and mechanical properties of sheets, flange plates, steel plate, anchor plates 15.13 Test certificate of wind velocity test 15.14 Test certificate of head frame Assembly, mast sections, trailing cable and cable connector as per relevant standards 15.15 Welding and Fabrication detail as per relevant standard Rules, Regulations and practices 15.16 Test certificate confirming the minimum thickness of galvanization as 80 micron. The internal and external galvanization shall be as per IS: 2629, 2633 and 4759 Others: 15.17 Valid dealership certificate from the OEM (if the bidder is an authorized dealer) 15.18 Party's credentials establishing the fact that they have executed successful supply, erection, testing and commissioning of minimum 4 (four) units of similar type of high mast systems (30 m or 20 m or combination of both) in Central/State Govt. or PSU organizations during last three years as on bid closing date. Performance certificate of satisfactory completion of jobs and trouble free operation of the high mast offered from those organizations shall be submitted. The manufacturer of the make offered by the party must have the experience of manufacturing similar type high masts. Credentials from the manufacturer to this effect shall be submitted with the offer. Offer without any of these documents will be liable for rejection. 15.19 Filled-in check list as per Annexure 2.	
PAYMENT TERMS: Supplier shall be paid 70% of the materials value against dispatch documents through bank and balance 30% of the materials value along with 100% taxes and Installation and commissioning charges after successful installation, testing, commissioning and handing over to OIL all high mast units	

SPECIAL TERMS & CONDITIONS.

1. Bidder (if other than OEM) has to submit valid authorized dealership certificate from OEM (high mast system manufacturer) with the bid.
2. Bidder has to submit credentials in support of their supplying minimum 2 (two) units of similar type (either 30 m or 20 m or combination of both) high mast lighting systems to reputed Central government/State government organizations/PSUs/ public limited companies during last 5 (five) years as on bid closing date. Additionally, credentials of satisfactory service of the supplied high mast units from end user/customer shall also be furnished.

3. Bidder shall agree for installation and commissioning of the high mast units at OIL's designated sites and quote installation and commissioning charges separately.
4. Bidder shall offer guarantee for 12 (twelve) months for the offered high mast units.

Note: "Similar" type means high mast lighting systems, either in 30 m or 20 m height or any combination of both heights, with the specified number and type of luminaires and other auxiliary systems like lantern carriage, power winch etc., as specified in the technical specifications of the present tender.

NOTE:

1. Bidder shall submit all documents with their bid as per Para 15.0 ("Documents to be Submitted with the Offer").
2. All the high mast units (complete with accessories) along with all materials and items necessary for installation and commissioning shall be supplied in one lot only.
3. High Mast units shall be installed and commissioned by the supplier at OIL's designated sites as directed by OIL's Engineer-in-charge. Supplier will be intimated one month in advance for commissioning. Boarding, lodging and transportation of commissioning personnel will be in the scope of the supplier.
4. Bidder shall quote commissioning charges separately.
5. Offered high mast units with all accessories must be new and in unused condition. No reconstructed/ rebuilt mast units/accessories will be acceptable.
6. Components used in the mast and accessories shall be of reputed make (as given in the detailed description) and easily available. Bidder shall submit Bill of Materials (including any additional item to the item list given in the detailed description, if considered essential). Bidder shall also supply all commissioning spares essential for installation and commissioning of the high mast units and feeder pillar panels at the designated sites of OIL.
7. OIL representatives shall carry out pre-despatch inspection of high mast units with all accessories and witness all necessary testing at manufacturer's works. Bidders shall separately quote charges towards inspection and witness test, if any. [To and fro charges of OIL's personnel to manufacturer's works will be to OIL's account].
8. High mast units with all accessories shall be guaranteed for 12 (twelve) months from the date of commissioning.
9. Supplier shall submit total 6 (six) sets of operation and maintenance manuals including electrical items for the high mast units (after final assembly and commissioning at site) before handing over the same to OIL.
10. Packing shall be done properly to avoid transit damage and water/ moisture ingress.

ANNEXURE- 2: Check List

The check list must be completed and returned with the offer with bidder's comment as per format detailed below. Bidder is to ensure that all the following points are covered in the offer. This will ensure proper evaluation of the offer.

Sl. No. Points Remarks (Yes/No/Agree)

1 Are you an OEM (high mast lighting system designer & manufacturer) or an authorized agent/dealer of the manufacturer? If you are a bidder, have you submitted VALID dealership certificate (from the high mast manufacturer)?
[Please note that it is a Bid Rejection Criterion]
2 Have you submitted credentials in support of your supplying minimum 2 (two) units of similar type of high mast lighting systems (30 m or 20 m height or combination of both) to reputed central/state govt./PSUs/public limited companies during last 5 (five) years as on bid closing date? Additionally, have you submitted credentials of satisfactory service of the supplied high mast units from the end user/customer?
[Please note that these are Bid Rejection Criteria]
3 Do you agree for installation and commissioning of the high mast units at OIL's designated sites?
[Please note that it is a Bid Rejection Criterion]
4 Have you quoted commissioning charges separately?
5 Have you submitted full technical specifications for the high mast lighting system and accessories and detailed documents/drawings/test certificates as per Para 15.0 ("Documents to be submitted with the offer")?
6 Do you agree for pre-despatch inspection? Please note that test certificates etc. are to be submitted at the time of final inspection, failing which dispatch clearance will not be given.
7 Have you offered guarantee for 12 (twelve) months for the offered high masts? [Please note that it is a Bid Rejection Criterion]
8 Have you mentioned any deviations or other items/ points not indicated /included in the specifications but deemed necessary for design, Installation and commissioning, efficient control and operation of the high mast lighting system?

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Technical Bid Checklist **Annexure-EEE**

Tender No.	
Bidder's Name :	

		Compliance by Bidder	
SL. NO.	**BEC / TENDER REQUIREMENTS**	Indicate 'Confirmed' / 'Not Confirmed' / Not applicable	Indicate Corresponding page ref. of unpriced bid or Comments
1	**Bidder to confirm that he has not taken any exception/deviations to the bid document .**		
2	**Confirm that the product offered strictly conform to the technical specifications.**		
3	**Confirm that the Offer has been made with Bid Bond / Bank Guarantee / Earnest Money along with the offer (Wherever Applicable) ?**		
4	**Confirm unconditional validity of the bid for 120 days from the date of opening of techno-commercial bid.**		
5	**Confirm that the prices offered are firm and / or without any qualifications?**		
6	**Confirm that all relevant fields in the on-line bidding format have been filled in by the bidder for the items quoted by them.**		
7	**Confirm that the the price bid is in conformity with OIL's online bidding format ?**		
8	**Confirm that the Bid comply with all the terms & conditions ?**		
9	**Confirm that the offers and all attached documents are digitally signed using digital signatures issued by an acceptable Certifying Authority (CA) as per Indian IT Act 2000.**		
10	**CONFIRM THAT YOU HAVE SUBMITTED THE DULY SIGNED INTEGRITY PACT DOCUMENT (Wherever Applicable)**		
11	**CONFIRM THAT YOU SHALL SUBMIT PERFORMANCE BANK GUARANTEE AS PER NIT IN THE EVENT OF PLACEMENT OF ORDER ON YOU (Wherever Applicable)**		
12	**CONFIRM THAT YOU HAVE SUBMITTED DOCUMENTS AS PER GENERAL QUALIFICATION CRITERIA**		
13	**Confirm that you have submitted Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager where Bid security has been submitted as Bank Guarantee.**		

NOTE: Please fill up the greyed cells only.

Response Sheet **Annexure-FFF**

Tender No.	
Bidders Name	

Bidders Response Sheet

Sl No.	Description	Remarks
1	Name of Bidder	
2	Whether tender document purchased from OIL's offices.	
3	Place of Despatch	
4	Whether Freight charges have been included in your quoted prices	
5	Whether Insurance charges have been included in your quoted prices	
6	Make of quoted Product	
7	Offered Validity of Bid as per NIT	
8	Delivery Period in weeks from placement of order	
9	Complied to Payment terms of NIT (if applicable) otherwise to Standard Payment Terms of OIL or not.	
10	Bid Security Submitted (if applicable)	
11	Details of Bid Security Submitted to OIL (if applicable)	
	a) Bid Security Amount (In Rs):	
	b) Bid Security Valid upto:	
12	If Bid security submitted as Bank Guarantee, Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager	
13	Bid Security if Not submitted reasons thereof	
14	Whether you shall submit Performance Security in the event of placement of order on you (if applicable)	
15	Integrity Pact Submitted (if applicable)	
16	Whether submitted documents in support of General Qualification criteria of NIT	
17	If bidder is Small scale unit whether you have quoted your own product	
18	If bidder is Small scale unit whether you are eligible for purchase preference (as per Govt guideliness)	
19	Whether filled up the bank details for online payment as per Annexure GGG	

NOTE: Please fill up the greyed cells only.

ANNEXURE - GGG

(TO BE FILLED UP BY ALL THE VENDOR IN THEIR OWN LETER HEAD)
(ALL FIELDS ARE MANDATORY)

Tender No.	**:……**
Name of Beneficiary	**:M/s.……**
Vendor Code	**:……...**
Address	**:...……**
	...……...
Phone No. (Land Line)	**:...……**
Mobile No.	**:...……**
E-mail address	**:...……**
Bank Account No. (Minimum	
Eleven Digit No.)	**:...……**
Bank Name	**:...……**
Branch	**:...……**
Complete Address of your	**:...……**
Bank	**:...……**
IFSC Code of your Bank	
a) RTGS	**:……...**
b) NEFT	**:……...**
PAN	**:……...**
VAT Registration No.	**:……...**
CST Registration No.	**:……...**
Service Tax Registration No.	**:……...**
Provident Fund Registration	**:……...**

I/We confirm and agree that all payments due to me/us from Oil India Limited can be remitted to our above mentioned account directly and we shall not hold Oil India Limited responsible if the amount due from Oil India Limited is remitted to wrong account due to incorrect details furnished by us.

……
Office Seal **Signature of Vendor**

Counter Signed by Banker:
Seal of Bank:

Enclosure: Self attested photocopies of the following documents-

1) **PAN Card**
2) **VAT Registration Certificate**
3) **Service Tax Registration**
4) **CST Registration**
5) **Provident Registration Certificate**
6) **Cancelled cheque of the bank account mentioned above (in original).**
7) **Bank Statement not older than 15 days on the date of submission.**