PETRONET LNG LIMITED

ENQUIRY DOCUMENT - MR

(Document No : B862-000-YA-MR-2666-544-RFQ)

इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम) ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)

हर एक काम देश के नाम

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BIDDING DOCUMENT NO. JP/B862-000-YA-MR-2666/544

BIDDING DOCUMENT
FOR
AMBIENT AIR ANALYSER SYSTEMS
FOR

PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT

Prepared & Issued by:

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

MASTER INDEX

NAME OF WORK : AMBIENT AIR ANALYSER SYSTEMS

BIDDING DOCUMENT NO. : JP/B862-000-YA-MR-2666/544

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इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)
एक नवरत्न कम्पनी
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)
A Navratna Company
पंजीकृत कार्यालय : इंजीनियर्स इंडिया भवन, 1, भीकाएजी कामा प्लेस, नई दिल्ली-110 066 भारत
Regd. Office : Engineers India Bhawan, 1, Bhikaiji Cama Place, New Delhi-110 066 INDIA

REQUEST FOR QUOTATION (RFQ)
(e-Bidding)
Limited –Global

Date: 07.05.2026

SL NO.	SALIENT FEATURES		DETAILS
a)	**Client**	:	**Petronet LNG Limited (Petronet LNG Petrochemical Project)**
b)	**Project**	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT**
c)	**Item**	:	**AMBIENT AIR ANALYSER SYSTEMS**
d)	**EIL RFQ No.**	:	**JP/B862-000-YA-MR-2666/544**
e)	**MR Category**	:	**II**
f)	**Pre-Bid Meeting**	:	**Applicable**
g)	**Pre-Bid Meeting Details and Venue**	:	At 1400 Hrs. on **14.05.2026** Venue: Through Video Conferencing (MS Teams). Meeting information as mentioned below: https://teams.microsoft.com/meet/49349486113355?p=KeyEBNkz6vPHazpfEe Meeting ID: 493 494 861 133 55 Passcode: xt7bu7a5
h)	**Last date of receipt for pre-bid queries**	:	Before 1855 Hrs. on 15.05.2026 Bidder shall submit their queries only through NIC-CPP portal strictly on or before cut-off date mentioned in RFQ after which, EIL shall reserve the right not to entertain any queries. Queries sent through e-mails or any other mode by any bidder may not be given any cognizance.
i)	**Earnest Money Deposit (EMD)**	:	NOT APPLICABLE
j)	**BID DUE DATE** **(Last date and time of submission of e-Bids)**	:	**08.06.2026; 1200 HRS**
k)	**UNPRICED BID OPENING** **Opening of Techno-commercial (Unpriced) e-Bids**	:	**09.06.2026; 1400 HRS** (*) **If date(s) identified as (*) above happen to be a declared holiday in EIL Gurugram, the next working day shall be considered.**
l)	**PRICED BID OPENING**	:	The date & time to be intimated later on to the technically & commercially acceptable bidders
m)	**Contact Person for any query/ clarification**	:	Mr. Mohit Gautam, Dy. Manager (SCM-C&P), Phone No. 0124 289 1343 E-mail ID: mohit.kumar@eil.co.in Mr. Ranjit Vunna, AGM (SCM-C&P), Phone no. 0124 289 1308 E-mail ID: ranjit.vunna@eil.co.in Mr. Jaydip Purkayastha, GM (SCM-C&P),

SL NO.	SALIENT FEATURES		DETAILS
			Phone no. 0124 289 1287, E-mail ID: jaydip@eil.co.in
n)	**e-Tendering portal for submission of Non Disclosure Agreement (NDA) & e-bids**	:	NOT APPLICABLE
o)	**Delivery Period/ Completion Period**	:	Indian Bidders: Within 11 (Eleven) Months on FOT Site basis from the date of LOA (Letter of Acceptance) / PO (Purchase order), whichever is earlier. **The date of receipt of material at site shall be considered as date of delivery.** Indigenous suppliers are required to dispatch the goods on prepaid door delivery basis through any registered Transporters on FOT Site basis. Foreign Bidders: Within 10 (Ten) Months on FCA International Air Port of Exit basis from the date of LOA (Letter of Acceptance) / PO (Purchase order), whichever is earlier. Date of Air way bill shall be considered as date of delivery. Foreign suppliers are required to dispatch the goods on FCA/CPT Indian port of entry basis, wherein the air transportation from FCA Port of Exit to the designated Indian Port shall be arranged by the supplier. In case foreign bidder is sourcing any component from India, such Indigenous sub-suppliers (of the foreign bidder) are required to dispatch the goods on door delivery basis through any registered Transporter on FOT Site basis. For Site Work: 02 (Two) Months from the date of Site Readiness. However, 15 (Fifteen) Days advance intimation for site readiness shall be given to the supplier for Site Work. The date of successful handing over of Equipment at site as per MR/PR shall be date of completion of site work.
p)	**INTEGRITY PACT**	:	NOT APPLICABLE
q)	**REVERSE AUCTION**	:	NOT APPLICABLE
r)	**PERIOD OF VALIDITY OF BIDS**	:	Bid shall remain valid for a period of **FOUR MONTHS** from final/extended due date of submission of Bid.
s)	**DEVIATIONS NOT PERMITTED** Bids are invited on **"Zero Deviation Basis".** Accordingly offer is to be submitted in complete compliance to RFQ Terms & Conditions without any deviation. **Offer with deviation shall be liable for rejection.** Hence, Bidder shall ensure submission of complete bid without any deviation as per requirement of Enquiry document in first instance itself.		
t)	This enquiry is issued on **Limited Bidding basis for "captioned items mentioned at sl. No. c above" only**. A separate intimation to the suppliers eligible for this enquiry shall be sent through e-mail subsequent to issuance of enquiry on e-procurement Portal. **Only those suppliers who are intimated of publication of the enquiry through EIL e-mail will be eligible to submit their bids. Bids received from any other supplier shall not be considered for evaluation and shall be rejected.**		

SL NO.	SALIENT FEATURES		DETAILS
	In case a bidder does not register on the e-procurement Portal and as a consequence, does not submit their bid on the Portal, it shall be deemed that he is not interested in bidding against this enquiry and no further correspondence will be entertained.		
u)	**RESTRICTIONS ON PROCUREMENT FROM BIDDERS FROM COUNTRIES SHARING BORDER WITH INDIA** Department of Expenditure (Govt. of India) vide OM no. 7/10/2021-PPD (1) DATED 23.02.2023 has issued the revised Guidelines for Restriction on Procurement from Bidders from Countries sharing Border with India. Bidder is advised to refer to the guidelines (annexed with Instruction to Bidders (ITB) of this bidding document) and ensure compliance to the same.		

Dear Sir/Madam,

1. Petronet LNG Limited (PLL) is a public limited company incorporated in April 1998 in India under the provision of the (Indian) Companies Act 1956, having registered office at 1st floor, World Trade Centre, Babar Road, Barakhamba Lane, New Delhi, PIN – 110001. PLL owns & operates LNG Terminal at Dahej in the state of Gujarat, India with the name plate capacity of 17.5 MMTPA. In view of expected growth in demand for petrochemical products in India and to remain competitive in the market with product self-sufficiency, Petronet LNG Ltd. (PLL) has planned to setup Petrochemical (PDH-PP) plant integrated with Ethane and Propane import facility at Dahej. The proposed Petrochemical Complex will use propane as a feedstock, dehydrogenate it to form propylene in a Propane Dehydrogenation Unit (PDH) and further polymerize to produce Polypropylene in a PP unit targeting import substitution.

   Engineers India Limited (EIL) has been engaged by PLL for Consultancy services for 750 KTA PDH Plant and 500 KTA PP plant with Ethane and Propane Storage and Handling Facility at Dahej Petrochemical complex.

2. E-bids under **single stage two bid system** are requested for the captioned item based on the requirement specified in this MR and in total compliance to technical specifications, scope and terms & conditions of RFQ documents/attachments.

3. Bidders are required to register themselves at http://eprocure.gov.in/eprocure/app. No registration fee would be charged from the bidders.

4. Bidder can download the RFQ Documents from e-tendering website of CPP portal (http://eprocure.gov.in/eprocure/app). All amendments, time extension, clarifications etc. will be uploaded in CPP Portal only. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date / time shall be considered on account of delay in receipt of any document by mail.

   Provisions mentioned in Instruction to Bidders with regard to uploading of bidding document, replies/clarifications to bidder queries, techno-commercially amendments etc., on EIL website shall stands modified to the extent that these shall be uploaded on CPP portal only.

5. Bidders to refer E-Tendering methodology enclosed with this RFQ. Various links such as “Help for Contractor”, “Information about DSC”, “FAQ”, “Resources Required”, “Bidders Manual Kit” etc. are available on home page of http://eprocure.gov.in/eprocure/app facilitating vendors to participate in the bidding process. Bidder are advised to download & utilize the available information/documents under these links for activities like Registration in CPPP, obtaining User ID & Password, uploading & submission of e-bids etc. Bidders are advised in their own interest to carefully go through Instructions for E-tendering and other related document available against various help links so as to ensure that bids are uploaded in E-tendering website well before the closing date and time of bid submission.

6. NIC Portal mandates that the bidders are to be registered on the portal before any enquiry can be issued to them. In order to expedite issue of enquiries, the information of enquiry is being issued through EIL Tender Portal, however, document shall be available on Central Public Procurement Portal. The name of bidder whose NIC ID details are submitted/available to EIL shall be issued the enquiry and enquiry to the balance bidders can only be issued once they will register themselves on NIC portal and provide their registration details to EIL.

   Therefore, all those vendors who have still not registered on the NIC Portal are required to register on the same (immediately after issue of enquiry) and inform the undersigned the registration details for

facilitating issue of enquiry to them on the NIC Portal failing which it will not be possible for them to upload their bids.

All those bidders who have not complied with the above registration requirements will not be issued this enquiry on NIC portal and will not be eligible to bid. Request for extension in due date of submission of bids due to non-registration or delayed registration in NIC portal shall not be entertained.

7. All amendments, time extension, clarifications etc. will be uploaded in CPP portal (http://eprocure.gov.in/eprocure/app) only. Bidders should regularly visit the e-tendering website to keep themselves updated. No extension in the bid due date / time shall be considered on account of delay in receipt of any document by Mail/Post.

8. Bidders are required to submit their bids complete in all respects in accordance with Instructions to Bidders (ITB) only through e-tendering website of CPP portal (http://eprocure.gov.in/eprocure/app) **on or before the bid-submission due date & time** as specified above. Bidder to carefully read and understand the instructions for e-tendering as indicated in ITB to upload their bid on e-tendering website.

   Physical Bids sent through Fax/E-mail/Courier/Post will not be accepted. However, any specific document required to be submitted in physical form as per RFQ shall also be submitted in physical form.

9. The vendor registration on NIC Portal is a very user-friendly process. However, in case of any doubt, the vendor may contact the undersigned.

   Bidder(s) are advised to upload their bid as soon as they are permitted to upload the bid. In the event of failure in bidder's connectivity with e-tendering Portal during the last few hours on account of any problem and they are likely to miss the deadline for bid submission in such a case request for extension in bid due date will not be entertained.

10. Please submit your Acknowledgement against the RFQ on EIL's website http://tenders.eil.co.in within the due date & time, with reason(s) of not participating in the bidding process in case of regret/negative acknowledgment. In case there is no response, the bidder shall be liable for suitable action including review of their enlistment with EIL for the subject item.

11. Submission of authentic documents is the prime responsibility of the bidder. Wherever EIL has concern or apprehension regarding the authenticity/ correctness of any document, EIL reserves a right of getting the document cross verified from the document issuing authority.

12. **Bidders are mandatorily required to indicate their name on each page of excel file / pdf file of Un-priced copy of Price Schedule while uploading the same.**

13. Bidder to note that the Inspection shall be carried out in line with Inspection Philosophy mentioned in RFQ Documents.

14. RFQ Document is non-transferrable.

15. Subsequent to the opening of bid, bidders are not allowed to change the price or substance of the bid i.e. scope of work, specifications, delivery schedule, completion period etc.

16. Consortium / Unincorporated Joint Venture Bids are not acceptable.

17. PLL/EIL reserves the right to assess Bidder's capabilities and capacity to execute the work using in-house information. Further in case Purchase Order awarded for the tendered work have to be terminated due to supplier's default and separate enquiry have to be floated to get the remaining / complete work executed, such defaulting supplier will not be considered for enquiries issued for the refloated works of the same project.

18. In case any bidder is found to be involved in cartel formation, his bid will not be considered for evaluation/placement of order. Such bidder will be debarred from bidding in future.

19. Canvassing in any form by the Bidder or by any other Bidder on their behalf may lead to disqualification of their Bid.

20. The bidder shall bear all costs associated with the preparation (including site visit, if required and other expenses incurred during bidding process) and submission of its bid, and the Purchaser/EIL shall in no case be responsible or liable for such costs regardless of the conduct or outcome of the bidding process.

21. EIL reserves the right to reject any or all Bids received and to annul the Bidding Process at its discretion without assigning any reason, whatsoever.

22. For detailed specifications, terms and conditions and other details, refer complete Bidding Document.

***Please specify EIL RFQ No. in all correspondence**

This limited invitation for e-bid is open only to suppliers to whom this RFQ is issued.

THIS IS NOT AN ORDER.

Very truly yours,

(Jaydip Purkayastha)
GM (SCM-C&P)
Engineers India Limited

BID DATA SHEET
(BDS)

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
1.	**ITB 3.0** **ELIGIBLE BIDDERS**	Enquiry Basis is: **Limited Global Competitive Bidding**
2.	**ITB 3.0** **ELIGIBILE BIDDERS** **NEW SUB-CLAUSE 3.7 (g)**	The following clause is **NOT APPLICABLE** for this enquiry. g) In cases of entity, quoting on behalf of their principal manufacturers, one stockiest/distributor/authorized seller cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one stockiest/distributor/authorized seller. There can be only one bid from the following: I. The principal manufacturer directly or through one entity on his behalf; and II. Entity on behalf of only one principal.
3.	**ITB 3.0** **ELIGIBILE BIDDERS** **NEW SUB-CLAUSE 3.9**	The following clause is **APPLICABLE** for this enquiry. **3.9 BIDS FROM INDIAN/ FOREIGN COUNTERPART ON BEHALF OF FOREIGN BIDDER** Wherever a limited enquiry is issued to a foreign company, being approved OEM (the manufacturer) and enlisted with Owner/EIL, but the OEM requests to bid through a bidder which maybe his subsidiary or his parent or another subsidiary of his parent, following methodology shall be followed: **a.** A company shall be considered as subsidiary of its parent company if the parent company: ➢ Controls the composition of the board of directors of the subsidiary; or ➢ Controls more than half of the voting right of the subsidiary; or ➢ Owns more than half of the paid-up equity of the subsidiary; For the purpose of definition of subsidiary, if a company A is a subsidiary of company B which is, in turn, a subsidiary of company C then company A will be considered to be a subsidiary of company B as well as C. b. Bidder may be Indian or foreign. c. Bidder may or may not be a manufacturer of the offered products. d. Bidder may or may not be enlisted with EIL. e. In case bidder proposes to ship the material from a warehouse/ works which may or may not be enlisted with Owner/EIL, the same shall be considered acceptable subject to following conditions: i. All items to be sourced (duly inspected under TPI) from OEM except minor outsourced accessories and the methodology for their assembly by Bidder will be spelt out in the offer by bidder.

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		ii. EIL/ Third Party Inspection (as applicable) shall be conducted before despatch of the items from OEM works. iii. OEM shall issue an authorization by the authorized signatory to the Bidder towards the above arrangement. iv. OEM shall furnish a backup corporate guarantee duly signed by the authorized signatory towards the performance of the equipment & accessories. v. In case engineering work is undertaken by bidder, responsibility matrix will be submitted, duly signed by OEM. vi. PO shall be on the Bidder and shall specify the OEM works as well as the final despatch point.
4.	**ITB 3.0** **ELIGIBILE BIDDERS** **NEW SUB-CLAUSE 3.10**	The following clause is **NOT APPLICABLE** for this enquiry. **3.10 BIDS FROM INDIAN/FOREIGN COUNTERPART ON BEHALF OF FOREIGN BIDDER** i. In case the enquiry is issued to a Foreign bidder on limited basis and offer is received from their Indian/Foreign counterpart on behalf of Foreign bidder, the same is acceptable provided counterpart furnishes authorization and confirmation from Foreign bidder that the commitment made by their counterpart during the bidding stage shall be acceptable to them. ii. In such a case, order shall be issued on Foreign bidder and material shall be supplied from their approved works only
5.	**ITB 12.1.1, ITB 19.0& ITB 21.0** **POSTAL ADDRESS & CONTACT DETAILS FOR SUBMISSION OF DOCUMENT (VIZ. BID SECURITY, ETC.)IN PHYSICAL FORM, IF ANY, AS PER RFQ**	**Jaydip Purkayastha, GM (SCM-C&P)** Engineers India Limited, EIL Office Complex, Sector 16, Gurugram-122004 Telephone: 0124 – 289 1343/ 1308 / 1287 e-mail id: mohit.kumar@eil.co.in/ ranjit.vunna@eil.co.in / jaydip@eil.co.in
6.	**ITB 12.1.2** **LIST OF DOCUMENTS**	a. Agreed Terms & Conditions for Foreign Bidder, duly filled and complete in all respect. b. Agreed Terms & Conditions for Indigenous Bidder or Indian Sub-supplier of Foreign Bidder, duly filled and complete in all respect. c. Bank Certified Mandate Form as per Form-A duly signed and stamped with the Banker's certification or cancelled cheque. d. Unpriced copy of Price Schedule duly indicating Quoted / Not Quoted (as applicable). e. Signed and stamped copy of Form-IA/IB/II, as applicable, (on Company's Letterhead) attached with Annexure-II of ITB in line with Government guidelines regarding procurement from bidders from a country or countries sharing Land Border

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		with India. f. Scanned copy of Addendum / Amendment (if any). g. Duly signed Non-Disclosure Agreement. h. PAN, TRC & Form-10F (applicable for foreign bidder). i. GST Registration Certificate (applicable for indigenous bidder). j. Power of Attorney (PoA) and/or Board Resolution in favour of Bid Signatory of the bidder as stipulated in ITB 20.0 in the e-bid. k. Power of Attorney (PoA) and/or Board Resolution in favour of Digital Signatory applicable if digital signatory is other than bid signatory as stipulated in ITB 20.0 in the e-bid. l. Any other document as stipulated in the bidding document.
7.	**ITB 34.0 & ITB 36.0** **EVALUATION OF TECHNO-COMMERCIAL BIDS & EVALUATION AND COMPARISON OF BIDS**	Evaluation shall be on Bottomline basis. 100% Input Tax Credit is available with PLL.
8.	**ITB 42.0 & SCC 2.2 (vi), SCC 6** **CONTRACT CUM PERFORMANCE BANK GUARANTEE (CPBG)**	APPLICABLE Note: i. Bidder may submit an Insurance Surety Bond in lieu of Performance Bank Guarantee. The Insurance Company issuing the Bond shall have a credit rating of AA from CRISIL / ICRA. This rating requirement shall not be applicable to Public Sector Insurance Companies.
9.	**ITB 42.0 & SCC 2.2 (vi), SCC 6** **CONTRACT CUM PERFORMANCE BANK GUARANTEE (CPBG)**	Bank Guarantees towards CPBG/ABG shall be accepted only when issued from a “Acceptable Bank”. The Definition of “Acceptable Bank” shall be as follows: *"Acceptable Bank" shall mean the State Bank of India constituted under the State Bank of India Act 1955; or a "Schedule Commercial Bank (in the category of Public Sector Banks and Private Sector Banks)" in India (as defined under the Reserve Bank of India Act, 1934) whose long term debt is rated at least AA- (AA Minus) by CRISIL Ltd. or assigned an equivalent rating by some other Indian Credit Rating Agency, ICRA, CARE or India Ratings, and acceptable to PLL in its sole discretion, or an international bank (having a branch in India)(Scheduled Foreign Banks in India) whose long term debt is rated at least A- (A minus) (or equivalent) by Standard & Poor Corporation / Fitch Ratings or A3 (or equivalent) by Moody’s Investor Services.”* In case, where more than one Rating is taken by Bank, lowest rating shall be considered for Acceptance of Bank.

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		Any Foreign Bank which is not a Scheduled Foreign Bank in India is also acceptable provided that offered documents like BG/LC etc. are counter guaranteed by any Indian Bank meeting the criteria of Acceptable Bank.
10.	**ITB NEW CLAUSE 50.0** **SHIFTING OF ORDER**	The following clause is **NOT APPLICABLE** for this enquiry. **50.0 SHIFTING OF ORDER** The following philosophy shall be followed for shifting: Based on lowest evaluated item wise prices, the shifting shall be carried out provided the following conditions are met: i. Shifting shall be done only if shifting cost of each order is upto Rs. 2,00,000/-. ii. Shifting shall not be resorted to if the value of the order is more than 25% of the total order value of the recommendation. However, this ceiling will not be applicable where total order value of recommendation is upto Rs. 8.0 Lakh. iii. In case the order value on L1 bidder is more than Rs 5,00,000/- then shifting shall not be resorted to. With above shifting the selected bidder for award will be deemed to be L1 bidder.
11.	**SCC 2.0** **PAYMENT TERMS**	**FOR INDIAN SUPPLIERS:** FOR SUPPLY AND TRANSPORTATION: 1. 02% against approval of drawings, wherever required (identified in PO/ PR/ Kick off Meeting / post order) at least in Code-2 / Code R and against submission of ABG of equivalent amount. 2. 03% against approval of drawings in Code-1 and against submission of ABG of equivalent amount. 3. 10% against placement of sub-orders to sub-vendors for Major raw material and submission of ABG of equivalent amount 4. 10% against receipt and identification of major specified raw materials at Supplier's works and against submission of ABG of equivalent amount 5. 50% (55% where drawing/doc approval not required) against dispatch documents (Copy of LR, IRN and packing list, Invoice) with full taxes duties and transportation charges 10% against receipt and acceptance of material at site 6. 10% against receipt and acceptance of material at site 7. 05% on receipt of all Final/As built Drawings/ Documents/ Data/ Manual in requisite number duly certified by Inspection agency as per VDR specified in Purchase Requisition and uploading the same in EIL-portal. 8. 10% on completion of Site Work. In case site front is not available up to 6 (Six) months (wherever site work is applicable), after receipt of all supplies at site, the payment against the site work (Sl. No. 8) shall be released on submission of additional Bank Guarantee of equivalent amount

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		valid for 1 (One) year or such extended period as may be required. FOR SITE WORK: 1. 90% against monthly progressive bills (based on agreed billing schedule) duly certified by Engineer-in-charge. 2. 10% on successful completion of site work and handing over of goods/equipment at site. FOR MANDATORY SPARES AND ITS TRANSPORTATION: 1. 90% against receipt of material at site (after receipt of main equipment at site) along with copy of LR, IRN and packing list, Invoice with full taxes, duties and transportation charges. 2. 10 % on receipt of all material & acceptance of all materials at site. FOR SUPERVISION OF ERECTION/ FOR TRAINING AT SITE: 100% prorate against monthly bills to be submitted by Supplier duly certified by Engineer in-Charge. FOR CPWAMC: 100% payment shall be paid at the end of each quarter against quarterly progressive bills to be submitted by Supplier duly certified by authorized representative of Owner. FOR PRE-COMMISSIONING, COMMISSIONING, SITE ACCEPTANCE TEST, TRIAL RUN, HANDING OVER THE ENTIRE SYSTEM TO CLIENT AS PER MR 100 % on successful completion duly certified by EIL/OWNER, as per Purchase Requisition. **FOR FOREIGN SUPPLIERS:** FOR SUPPLY AND TRANSPORTATION: 1. 02% against approval of drawings, wherever required (identified in PO/ PR/ Kick off Meeting / post order) at least in Code-2 / Code R and against submission of ABG of equivalent amount. 2. 03% against approval of drawings in Code-1 and against submission of ABG of equivalent amount. 3. 10% thru wire transfer against placement of sub-orders to sub-vendors for Major raw material and submission of BG of equivalent amount. 4. 15% thru wire transfer against receipt and identification of major specified raw materials at Supplier's works and against submission of ABG of equivalent amount. 5. 55% (60% in cases where drawing approval is not required) of PO value along with full Ocean freight (in case of CFR delivery basis) against shipping documents through irrevocable Letter of Credit/wire transfer. 6. 05% thru wire transfer on receipt of all Inspection agency certified Final/As built Drawings/Documents/Data/Manual in

BID DATA SHEET

S.NO.	CL. NO.	CONTENT
		requisite number of copies/sets/ VDR specified in Purchase Requisition and uploading the same in EIL-portal. 7. 10% on successful completion of Site Work through wire transfer. Note: In case site front is not available up to 6 (Six) months (wherever site work is applicable), after receipt of all supplies at site, the payment against the site work (Sl. No. 7) shall be released on submission of additional Bank Guarantee of equivalent amount valid for 1 (One) year or such extended period as may be required. FOR SITE WORK: 1. 90% against monthly progressive bills (based on agreed billing schedule) duly certified by Engineer-in-charge. 2. 10% on successful completion and handing over of goods/equipment at site. FOR MANDATORY SPARES AND ITS TRANSPORTATION: 100% thru irrevocable Letter of Credit against shipping documents after dispatch of main equipment. FOR SUPERVISION OF ERECTION/ FOR TRAINING AT SITE: 100% against monthly bills to be submitted by Supplier duly certified by Engineer-in-Charge. FOR CPWAMC: 100% payment shall be paid at the end of each quarter against quarterly progressive bills to be submitted by Supplier duly certified by authorized representative of Owner. FOR PRE-COMMISSIONING, COMMISSIONING, SITE ACCEPTANCE TEST, TRIAL RUN, HANDING OVER THE ENTIRE SYSTEM TO CLIENT AS PER MR 100 % through Wire Transfer on successful completion duly certified by EIL/OWNER, as per Purchase Requisition.
12.	**SCC 2.0** **EIL vis-a-vis Supplier Commitments**	**EIL INPUTS** PR — Within 2 weeks **SUPPLIER COMMITMENTS** Document Control Index — Within 2 weeks Progress Schedule (Bar chart)/ material control — Within 2 weeks GAD — 8 weeks System Configuration — 6 weeks Sizing Calculation — 10 weeks Equipment specification — 12 weeks Balance drawings as per VDR — 20 weeks

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		Note: Time extension due to non-availability of drawing and/or details shall be considered only if the progress of work is commensurate to the drawing front released.
13.	**SCC 3.0** **TRANSPORTATION**	ODC / CRITICAL CONSIGNMENT: NOT APPLICABLE
14.	**SCC 8.2** **PRICE VARIATION**	NOT APPLICABLE
15.	**SCC 11.0** **MARINE CUM INSURANCE DETAILS**	Marine Cum Erection Insurance Policy is enclosed Annexure to SCC.
16.	**SCC 12.1.5 & 12.2.6** **LOADING AND PENALTY CRITERIA (LPC) OF MR**	The following clause is **NOT APPLICABLE** for this enquiry. **LOADING AND PENALTY CRITERIA (LPC) OF MR** In partial modification to the provisions of LPC Criteria of MR, it is being clarified that Freight and Duties along with its applicable taxes (applicable for Foreign Bidder) shall also be considered for calculation of Total Cost and Capital Cost for calculation of Loading Amount.
17.	**SCC 16.0** **PART ORDER**	NOT APPLICABLE
18.	**GCC 24.0, SCC17.0** **REPEAT ORDER**	NOT APPLICABLE
19.	**SCC 19.0** TERMS & CONDITIONS ~~FORSUPERVISION OF ERECTION, TESTING & COMMISSIONING~~ /TRAINING AT SITE ~~/ HAZOP / SUPERVISION OF PGTR~~	APPLICABLE AS PER ANNEXURE-III TO SCC
20.	**SCC 20.0** TERMS & CONDITIONS FOR INSTALLATION/SITE WORK / PRE-COMMISSIONING, COMMISSIONING, SITE ACCEPTANCE TEST, TRIAL RUN, HANDING OVER THE ENTIRE SYSTEM	APPLICABLE AS PER ANNEXURE-IV TO SCC
21.	**SCC 21.0** TERMS & CONDITIONS FOR ANNUAL MAINTENANCE CONTRACT (AMC)	APPLICABLE AS PER ANNEXURE-V TO SCC. Notes: i) The order for Comprehensive Post Warranty Annual Maintenance Contract (CPWAMC), if required, will be placed by EIL/PLL separately before the expiry of contractual Warranty Period / Defect Liability Period. However, the price of CPWAMC services will remain valid for the entire AMC period. ii) Quoted CPWAMC charges for shall be minimum 10%

<table>
<tr><th colspan="3">BID DATA SHEET</th></tr>
<tr><th>S.NO.</th><th>CL. NO.</th><th>CONTENT</th></tr>
<tr><td></td><td></td><td>(ten percent) of the quoted supply prices. In case a supplier quotes CPWAMC charges less than 10% of supply price, the differential amount shall be retained from supply prices and the same shall be progressively paid to the vendor on year wise prorated basis (based on the % distribution indicated under Sl. No. (iii) below).

However, in case CPWAMC order is not awarded by Owner, the same differential amount shall be deducted/subtracted from the Total Order Value and shall not be paid to the vendor.

iii) Bidder shall quote Lumpsum (LS) price for CPWAMC on BoQ/Price Schedule of BoQ/Schedule of Price. However, yearwise CPWAMC price shall be distributed as indicated below:
<table>
<tr><th>Year</th><th>% Distribution</th></tr>
<tr><td>Year 1</td><td>30 %</td></tr>
<tr><td>Year 2</td><td>33 %</td></tr>
<tr><td>Year 3</td><td>37 %</td></tr>
</table></td></tr>
<tr><td>22.</td><td>SCC 22.0
TERMS & CONDITIONS FOR TRAINING AT SUPPLIER/OEM WORKS</td><td>NOT APPLICABLE</td></tr>
<tr><td>23.</td><td>ANNEXURE II TO SCC CLAUSE NO. B-2 IMPORT DUTIES</td><td>Merit Rate of Customs Duty shall be applicable for this enquiry.</td></tr>
<tr><td>24.</td><td>IFB 11.0
NEW CLAUSE TO IFB</td><td>The following clause is NOT APPLICABLE for this enquiry.

<u>WHEREVER BIDDER IS INTENDING TO QUALIFY AS AT LEAST 51% OWNED INDIAN SUBSIDIARY OF A FOREIGN PRINCIPAL (AS PER MR/TECHNICAL BQC)</u>

In addition to the provision to the bidding document, Bidder shall comply the following:
• Extended warranty: The bidder shall provide extended warranty of 12 months over & above the guarantee/ warrantee period specified in the Bidding Document.

Additional PBG:

The Principal or the Group Company (as the case may be) shall furnish the Performance Bank Guarantee, equivalent to 5% of Total Contract Value. The performance Bank Guarantee by Principal or Group Company shall be additional to PBG (i.e. equivalent to 10% of the Total Contract Value) required to be submitted by the successful bidder.</td></tr>
</table>

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		In case where Principal or the Group Company does not have Permanent Establishment in India as per Indian Income Tax Act, the bidding company (Bidder) can furnish Performance Bank Guarantee for an amount which is sum of PBG amount to be submitted by the bidder and additional PBG amount required to be submitted by the Principal or the Group company (i.e. equivalent of 15% of the Total Contract Value). Also, in such as case bidding company shall furnish an undertaking that their foreign based Principal or the Group Company, is not having any permanent establishment in India in terms of Income Tax Act of India. Undertaking from the Principal or the Group Company to the effect that in addition to invoking the PBG submitted by the bidding company, the PBG provided by the Principal or the Group Company can be invoked by PLL due to non-performance of the bidding company.
25.	**GENERAL**	"FOB" and "CFR" mentioned anywhere in the RFQ/ Enquiry document shall be read as "FCA (named place of delivery) & "CPT" (named place of delivery); respectively. Words "Sea port" & "Ocean freight" mentioned anywhere in the RFQ/ Enquiry Document shall be read as "Airport" & "Air freight" respectively. Word "Bill of lading" mentioned anywhere in the RFQ/Enquiry document shall be read as "Airway Bill".

BIDDING FORMS

FORM-A

BANK MANDATE FORM
(As per ITB)

1. Bidder Name :
2. Bidder Code :
3. Address of the Bidder :
4. Particulars of Bank Account of Bidder :
   a. Name of the Bank :
   b. Name of the Branch and Address of the Branch :
   c. Branch Code : :
   d. 9-Digit MICR code Number of the Bank & Branch :
   (As appearing in the MICR Cheque issued by the bank) :
   (Please do not give multicity cheque book code :
   Number)
   e. Type of account (Saving Bank, Current or Cash Credit) :
   f. Account Number :
   g. RGTS/IFSC Code (11 digit) :
   h. NEFT Code No. :
5. E-mail address of the Bidder :
6. Contact Person(s) of the Bidder :

I/we declare that the particulars given above are correct and complete and I/we accord our consent for receiving all our payments through Electronic Mechanism.

_____
(Signature and designation of the Authorised person(s) of Bidder)

Official seal of the Bidder

Place :
Date :

BANK CERTIFICATION

Certified that the particulars furnished above are correct as per our records.
Place :
Date :

_____
Signature of the Authorised Official of the Bank

Bank's Stamp

FORM–B

FORMAT FOR BIDDERS' QUERIES (PRE-BID)
(AS PER ITB)

RFQ Document No. : _____

SL. NO.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		

NOTE:

1. **The Pre-Bid Queries in the above format shall be uploaded by the bidder on CPP Portal within the cut off date as per the bidding document.**

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

FORM-C

TAX RESIDENCY CERTIFICATE

TRC obtained by the Non-resident from Government of foreign country shall contain the following particulars:

1) Name of the assessee :

2) Status (individual, company, firm, etc.) of the assessee:

3) Nationality (in case of individual) :

4) Country or specified territory of incorporation or registration (in case of others):

5) Assessee's tax identification number in the country or specified territory of residence or in case of no such number, then a unique number on the basis of which the person is identified by the Government of the country or the specified territory:

6) Residential status for the purpose of Tax:

7) Period for which the certificate is applicable:

8) Address of the applicant for the period for which the certificate is applicable:

9) Name of the assessee:

FORM NO.10 F

[See sub-rule (1) of rule 21AB]

Information to be provided under sub-section (5) of section90 or sub-section (5) of section 90A of the Income-tax Act, 1961

I_____*son/daughter of Mr. _____in the capacity of ____ _____(designation) do provide the following information, relevant to the previous year _____*in my case/in the case of _____for the purposes of sub-section (5) of *section90/section 90A:-

Sl. No.	Nature of information		Details#
(i)	Status (individual, company, firm etc.) of the assessee	:	
(ii)	Permanent Account Number (PAN) of the assessee if allotted	:	
(iii)	Nationality (in the case of an individual) or Country or specified territory of incorporation or registration (in the case of others)	:	
(iv)	Assessee's tax identification number in the country or specified territory of residence and if there is no such number, then, a unique number on the basis of which the person is identified by the Government of the country or the specified territory of which the assessee claims to be a resident	:	
(v)	Period for which the residential status as mentioned in the certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A is applicable	:	
(vi)	Address of the assessee in the country or territory outside India during the period for which the certificate, mentioned in (v) above, is applicable	:	

I have obtained a certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A from the Government of _____(name of country or specified territory outside India).

Signature:
Name:
Address:
Permanent Account Number:

Verification

I_____do here by declare that to the best of my knowledge and belief what is stated above is correct, complete and is truly stated.

Verified today the____day of_____

_____
Signature of the person providing the information

Place:

Project / Client:
RFQ No.:
Item:
Notes: a) Use capital letters and English language only. b) Bidder to submit it duly signed and stamped on each page, as a token of their acceptance and confirmation(s) in respect of RFQ. c) Bidder to note that fill in the blanks- data / details is to be entered by the bidder and correct option ticked in respect of Sl. Nos. 1,2,3,4,11,12 and 13 (the same are also highlighted in shaded grey in the table below). d) Bidders are required to carefully fill their responses to below points along with submission of relevant documentary evidence as per the provisions of RFQ. e) In case the responses are incomplete/ inconsistent and / or not substantiated by relevant document(s) the bidders are at risk of evaluation of their bid being concluded without affording them another opportunity to complete / correct / comply their submission with respect to RFQ requirements. In such a case EIL/ Owner reserves the right to complete the evaluation based on the available information and EIL/ Owners decision shall be final and binding.

SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
1.	a) Bidder/Supplier Name	
	b) Status of Bidder's Firm: Proprietorship/ Partnership/ Limited Liability Partnership / Public Ltd./ Pvt Ltd./ Govt Deptt./ PSU/ Others (Specify)	
	c) Supplier's Offer Ref No.& Date	
2.	Bidder's/ Supplier'sauthorized signatory's: a) Name: b) Tel. No.: c) Mob. No.: d) E-mail: e) Address (on which order is to be placed): *Note: Bidder to ensure that the Address mentioned here shall be in line with the* ***GST Certificate*** *and* ***Vendor enlistment in EIL (applicable for limited enquiries)***	
3.	a) Specify Despatch Point b) GSTIN no.	a) …….. b) …… In case different despatch points are applicable, specify use same as under:- ….

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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<table>
<tr><th>SL. NO.</th><th>DESCRIPTION</th><th>BIDDER'S / SUPPLIER'S CONFIRMATION
(Strike out response which is not applicable)</th></tr>
<tr><td>4.</td><td>Rate of GST</td><td>GST Rate (in %) _____ [If a single rate of GST is applicable]
If different rates of GST are applicable, specify the GST rates in the table below:
<table>
<tr><th>Description</th><th>GST rate in %</th></tr>
<tr><td>Supply & Freight</td><td></td></tr>
<tr><td>Site Work</td><td></td></tr>
<tr><td>3D Modelling</td><td></td></tr>
<tr><td>Supervision of E/T/C & PGTR</td><td></td></tr>
<tr><td>Hazop Study</td><td></td></tr>
<tr><td>Training at OEM/Vendor Works</td><td></td></tr>
<tr><td>Training at Site</td><td></td></tr>
<tr><td>PWAMC</td><td></td></tr>
<tr><td>Any other
(Please indicate nature)</td><td></td></tr>
</table></td></tr>
<tr><td>5.</td><td>Confirm that quoted prices are strictly as per Price Schedule format of the RFQ Document and following has been quoted in the Priced Part as per applicability in RFQ/Price Schedule:
a) Supply on FOT dispatch point basis
b) Mandatory Spares (wherever sought separately)
c) Site Work
d) Transportation
e) 2 years O&M Spares
f) Unit Rates for Addition/ Deletion
g) Unit rates for specific test
h) 3D Modelling
i) Hazop Study
j) Rates for Supervision of E/T/C & PGTR/ Training at Site/3D Modelling/Hazop Study
k) Training at Vendor/OEM Works
l) Overtime Rates for Supervision of E/T/C & PGTR
m) PWAMC</td><td>Confirmed</td></tr>
<tr><td>6.</td><td>Confirm that quoted prices will remain firm and fixed (except where price escalation/variation is allowed in the</td><td>Confirmed</td></tr>
</table>

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	RFQ) till complete execution of the order.	
7.	Confirm that firm transportation charges have been quoted in Price part. In case the same are not quoted in price part the Supply price shall be deemed to include the freight.	Confirmed
8.	Confirm that the offer is valid for the period specified in RFQ/BDS, from the final 'Bid Due Date'.	Confirmed
9.	Confirm submission of EMD/Bid Security (As applicable) as per provision of RFQ.	Confirmed
10.	Bidder's Undertaking Regarding Sharing Land Border with India: (Form-I A, II, whichever applicable) Format for Undertaking is appended with **Annexure-II to ITB.**	Submitted
11.	a) Bidder confirms that they are not on Holiday/Blacklist/Negative/Suspension/ Banning list of EIL/PLL as on date of submission of our bid.	Confirm / Not Confirm Note: In case response is not marked, "Confirm" shall be considered as Bidder's response
	~~b) Bidder confirms that they are not banned or delisted or black listed by any government department/ Government or Quasi Government agencies/ public sector as on date of submission of our bid.~~	~~Confirm / Not Confirm~~ ~~Note: In case response is not marked, "Confirm" shall be considered as Bidder's response~~
	c) Bidder confirms that they are not under liquidation, court receivership or similar proceedings.	Confirm / Not Confirm Note: In case response is not marked, "Confirm" shall be considered as Bidder's response
12.	a) Bidder confirms that they are not involved in any Litigation / Arbitration. b) In case response to a) above is 'Not Confirmed', Bidder hereby confirm that the current Litigation / Arbitration, in which they are involved will not have any impact in work being tendered or in entering into contract during the validity of offer and performing the contract till all the contractual obligations under contract are performed.	a) Confirmed / Not Confirmed *Note: In case response is not marked, "Confirmed" shall be considered as Bidder's response* b) Confirmed / Not Confirmed

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
13.	Bidder confirms that: a) None of Directors (in Board of Director) of Bidder is a relative of any Director (in Board of Director) of PLL/ EIL OR b) The bidder is not a firm in which any Director (in Board of Director) of PLL/EIL or their relative is a partner.	a) Confirmed /Not Confirmed b) Confirmed / Not Confirmed If response is marked as "Not Confirmed", then provide relevant details…… *Note: In case response is not marked, "Confirmed" shall be considered as Bidder's response*
14.	Bidder confirms that there is no conflict of interest with other bidders, as per provisions of RFQ Document.	Confirmed
15.	We confirm that the content of the Bidding Document including Price schedule/ prices and Corrigendum / Addendum (if any) have not been altered or modified.	Confirmed
16.	Integrity Pact (if applicable as per IFB/LIB/RFQ): Bidder confirms that they comply with the provisions of Integrity Pact (IP) and have submitted IP duly signed and stamped. In respect of Integrity Pact (IP), Bidder confirms that: a) They have submitted the IP duly signed by authorised POA holder of the Bidder. b) IP is signed on all the pages. c) IP is signed by two witnesses. d) In case of 'Proprietorship firm', IP is signed by the Proprietor. e) In case of Partnership firm, IP is signed by atleast two partners of the firm. f) The correct name and number of RFQ is mentioned in the IP	Confirmed
17.	Bank Mandate We hereby undertake to submit the Bank mandate Form (refer elsewhere for format) along with first invoice/ bill submission, duly filled and certified by bank along with cancelled cheque. In case the same is not submitted along with first invoice, the subsequent date of submission of mandate form shall be considered as the date of invoice submission.	Confirmed
18.	Compliance to RFQ Documents We hereby agree to fully comply with, abide by and accept the RFQ/Enquiry documents including but not limited to	Confirmed

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	technical, commercial and other conditions including submission of CPBG within 30 days from date of LOA, technical specifications including general/ technical notes and scope of supply/work including documentation as per material requisition (MR) and subsequent technical/ commercial amendment, if any, and technical/commercial corrigendum, if any, without any variation, deviation or reservation.	
19.	Bidder understands that being a "Zero Deviation" bidding & in the case of submission of deviations, the evaluation of bid shall be done as per provisions of RFQ and the bid is liable for rejection.	Confirmed
20.	All commercial terms / compliance / salient details are given /confirmed in this ATC and not elsewhere in the Offer. Bidder to note that the terms and conditions mentioned elsewhere in their offer or Printed terms and conditions of the bidder, if any, appearing in quotation/offer, Bidder's own terms and conditions shall not be given cognizance of.	Confirmed

DECLARATION BY THE BIDDER:

We further confirm that the above declaration/confirmation (including the pre-filled / default response to be considered in case relevant option is not ticked/ not filled) are true and correct in all respects and not in conflict with the declaration mentioned in any part of our bid /any other document.In case of contradiction, the confirmation given herein by the bidder shall prevail over the declaration/ statement/ confirmation given in other places by the Bidder.

We also declare that in case, at a later date, if the above declaration(s) / confirmation(s) submitted in our bid are found to be false, bidder shall be held responsible for the same and EIL/Owner has every right to take action against the bidder / company, as deemed fit as per law of the land and provisions of RFQ Document and EIL/Owner's right to put our Company on Suspension/Banning list for future business with EIL/Owner.

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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Project / Client:
RFQ No.:
Item:

Notes:

a) Use capital letters and English language only.

b) Bidder to submit it duly signed and stamped on each page, as a token of their acceptance and confirmation(s) in respect of RFQ.

c) Bidder to note that fill in the blanks- data / details is to be entered by the bidder and correct option ticked in respect of Sl. Nos. 1, 2, 3, 4, 5, 6, 7, 8(a-b), 10, 17, 18 and 19 (the same are also highlighted in shaded grey in the table below).

d) In case of Foreign bidder, if any supply/services are in the scope of their Indian sub-supplier, this format shall be accompanied with the ATC format for Indigenous bidder/Indian sub-supplier, duly filling up the relevant details.

e) Bidders are required to carefully fill their responses to below points along with submission of relevant documentary evidence as per the provisions of RFQ.

f) In case the responses are incomplete/ inconsistent and / or not substantiated by relevant document(s) the bidders are at risk of evaluation of their bid being concluded without affording them another opportunity to complete / correct / comply their submission with respect to RFQ requirements. In such a case EIL/ Owner reserves the right to complete the evaluation based on the available information and EIL/ Owners decision shall be final and binding.

SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
1.	a) Bidder/Supplier Name	
	b) Status of Bidder's Firm: Proprietorship/ Partnership/ Limited Liability Partnership / Public Ltd./ Pvt Ltd./ Others (Specify)	
	c) Supplier's Offer Ref No.& Date	
2.	Bidder's/ Supplier's authorized signatory's: a) Name: b) Tel. No.: c) Mob. No.: d) E-mail: e) Address (on which order is to be placed): *Note: Bidder to ensure that the Address mentioned here shall be in line with the **Vendor enlistment in EIL (applicable for limited enquiries)***	
3.	International Seaport of Exit Basis / FCA Airport of Exit	
4.	a) Country of Origin from where the goods are being offered.	a) _____

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	b) Bidder hereby confirms that Certificate of country of origin, issued/attested by Local chamber of commerce/trade association, shall be furnished by the seller at no extra cost (i.e. shall be borne by seller).	b) Confirmed
5.	Indicate shipping weight (net and gross) of the consignment.	
6.	Indicate size of the consignment as applicable	
7.	Indicate the HSN Tariff Code of the Items & Classification	
8.	a) Confirm whether any Free Trade Agreement (FTA) or Comprehensive Economic Partnership Agreement (CEPA) or any such multi-lateral / bi-lateral Agreement or Treaty with India or under Generalized System of Preference (GSP); or under any other notification (allowing lower rate of Custom Duty). In case, bidder does not declare specifically Yes / No, it shall be presumed that no such Multilateral / Bilateral Trade Agreement exists between Bidder's country & India.	YES / NO (Please tick any one)
	b) In case Multilateral / Bilateral trade agreement is applicable as per 8(a) above, please furnish the details.	
	c) Confirm that in case of any Multilateral / Bilateral trade agreement, the Supplier shall be liable to provide all documentation to ensure for availing the exemption/waiver.	Confirmed
	d) In case the Supplier defaults on this due to any reason, whatsoever, they shall be liable to bear the incremental Customs Duty applicable, if any.	Confirmed
	e) Confirm that any Customs Duty Applicability on account of any change in bi-lateral/multi-lateral agreement shall be to seller's account.	Confirmed
	f) Confirm that documentation to be furnished for availing the exemption/waiver of Customs Duty shall be specifically listed in the Letter of Credit also as the pre-requisite for release of payment against shipping documents and this documentation shall necessarily form a part of shipping documents	Confirmed
9.	Currency of Quote (EUR/USD/GBP/JPY):	As per Price Schedule
10.	Banker's address & details for L/C opening along with telephone number/e-mail address, SWIFT Code and Account Number.	

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	Same details shall be considered for wire transfer/payment.	
11.	Confirm that quoted prices are strictly as per Price Schedule format of the RFQ Document and following has been quoted in the Priced Part as per applicability in RFQ/Price Schedule: a) Supply on FOB/FCA port of exit basis b) Mandatory Spares (wherever sought separately) c) Site Work d) Ocean Freight e) 2 years O&M Spares f) Unit Rates for Addition/ Deletion g) Unit rates for specific test h) 3D Modelling i) Hazop Study j) Rates for Supervision of E/T/C & PGTR/ Training at Site/3D Modelling/Hazop Study k) Training at Vendor/OEM Works l) Overtime Rates for Supervision of E/T/C & PGTR m) PWAMC	Confirmed
12.	Confirm that quoted prices will remain firm and fixed (except where price escalation/variation is specifically allowed in the RFQ) till complete execution of the order.	Confirmed
13.	Confirm that firm transportation/freight charges have been quoted in Price part. In case the same are not quoted in price part the Supply price shall be deemed to include the freight.	Confirmed
14.	Confirm that the offer is valid for the period specified in RFQ/BDS, from the final 'Bid Due Date'.	Confirmed
15.	Confirm submission of EMD/Bid Security (As applicable) as per provision of RFQ.	Confirmed
16.	Bidder's Undertaking Regarding Sharing Land Border with India: (Form-I A, II, whichever applicable) Format for Undertaking is appended with **Annexure-II to ITB.**	Submitted
17.	a) Bidder confirms that they are not on Holiday/Blacklist/Negative/Suspension/ Banning list of EIL/PLL as on date of submission of our bid.	Confirm / Not Confirm Note: In case response is not marked, "Confirm" shall be considered as Bidder's response
	~~b) Bidder confirms that they are not banned or delisted or black listed by any government department/~~	~~Confirm / Not Confirm~~

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	~~Government or Quasi Government agencies/ public sector as on date of submission of our bid.~~	~~Note: In case response is not marked, "Confirm" shall be considered as Bidder's response~~
	c) Bidder confirms that they are not under liquidation, court receivership or similar proceedings.	Confirm / Not Confirm Note: In case response is not marked, "Confirm" shall be considered as Bidder's response
18.	a) Bidder confirms that they are not involved in any Litigation / Arbitration. b) In case response to a) above is 'Not Confirmed', Bidder hereby confirm that the current Litigation / Arbitration, in which they are involved will not have any impact in work being tendered or in entering into contract during the validity of offer and performing the contract till all the contractual obligations under contract are performed.	a) Confirmed / Not Confirmed *Note: In case response is not marked, "Confirmed" shall be considered as Bidder's response* b) Confirmed / Not Confirmed
19.	Bidder confirms that: a) None of Directors (in Board of Director) of Bidder is a relative of any Director (in Board of Director) of PLL/ EIL OR b) The bidder is not a firm in which any Director (in Board of Director) of PLL/EIL or their relative is a partner.	a) Confirmed /Not Confirmed b) Confirmed / Not Confirmed If response is marked as "Not Confirmed", then provide relevant details…… *Note: In case response is not marked, "Confirmed" shall be considered as Bidder's response*
20.	Bidder confirms that there is no conflict of interest with other bidders, as per provisions of RFQ Document.	Confirmed
21.	We confirm that the content of the Bidding Document including Price schedule/ prices and Corrigendum / Addendum (if any) have not been altered or modified.	Confirmed
22.	Integrity Pact (if applicable as per IFB/LIB/BDS): Bidder confirms that they comply with the provisions of Integrity Pact (IP) and have submitted IP duly signed and stamped. In respect of Integrity Pact (IP), Bidder confirms	Confirmed

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	that: a) They have submitted the IP duly signed by authorised POA holder of the Bidder. b) IP is signed on all the pages. c) IP is signed by two witnesses. d) In case of 'Proprietorship firm', IP is signed by the Proprietor. e) In case of Partnership firm, IP is signed by atleast two partners of the firm. f) The correct name and number of RFQ is mentioned in the IP	
23.	Compliance to RFQ Documents We hereby agree to fully comply with, abide by and accept the RFQ/Enquiry documents including but not limited to technical, commercial and other conditions including submission of CPBG within 30 days from date of LOA, technical specifications including general/ technical notes and scope of supply/work including documentation as per material requisition (MR) and subsequent technical/ commercial amendment, if any, and technical/commercial corrigendum, if any, without any variation, deviation or reservation.	Confirmed
24.	Confirm that all information required in line with the prevalent provisions of income tax including but not limited to TRC, FORM - 10F, PAN etc., as per Bidding Forms shall be submitted before release of any payment or within one month of the release of order, whichever is earlier.	Confirmed
25.	Bidder understands that being a "Zero Deviation" bidding & in the case of submission of deviations, the evaluation of bid shall be done as per provisions of RFQ and the bid is liable for rejection.	Confirmed
26.	All commercial terms / compliance / salient details are given /confirmed in this ATC and not elsewhere in the Offer. Bidder to note that the terms and conditions mentioned elsewhere in their offer or Printed terms and conditions of the bidder, if any, appearing in quotation/offer, Bidder's own terms and conditions shall not be given cognizance of.	Confirmed

DECLARATION BY THE BIDDER:

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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We further confirm that the above declaration/confirmation (including the pre-filled / default response to be considered in case relevant option is not ticked/ not filled) are true and correct in all respects and not in conflict with the declaration mentioned in any part of our bid /any other document. In case of contradiction, the confirmation given herein by the bidder shall prevail over the declaration/ statement/ confirmation given in other places by the Bidder.

We also declare that in case, at a later date, if the above declaration(s) / confirmation(s) submitted in our bid are found to be false, bidder shall be held responsible for the same and EIL/Owner has every right to take action against the bidder / company, as deemed fit as per law of the land and provisions of RFQ Document and EIL/Owner's right to put our Company on Suspension/Banning list for future business with EIL/Owner.

BIDDER'S NAME AND SIGNATURE WITH STAMP/SEAL

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INSTRUCTIONS
TO
BIDDER

FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ PROJECT
(EIL JOB NO: B862)

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A GENERAL

1.0 SCOPE OF BID

1.1 In connection with the Invitation for Bids/ Letter Inviting Bid, Engineers India Limited on behalf of Petronet LNG Limited (Petronet LNG Petrochemical Project) invites e-Bid(s), under single stage single/two bid system (Refer BDS), for the entire scope of supply and services covered under the Bidding Document.

1.2 Throughout the Bidding Document:

(a) Owner/Buyer/Purchaser means Petronet LNG Limited (PLL), a company having its registered office at 4th Floor, Tower I, World Trade Centre, Nauroji Nagar, New Delhi, 110 029, India.

(b) EIL means Engineers India Limited, a company incorporated under the Companies Act, 1956 having its registered office at 1, Bhikaiji Cama Place, R.K Puram, New Delhi-110066 (INDIA), acting as a Consultant for the Project.

(c) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular and word written in capital or small letter or where the first letter is capital have the same meaning.

(d) “day” means calendar day.

(e) E-Tendering website (or e-procurement CPP portal / CPPP/ E-tenderingsystem/ e-Procurement Portal/ e-tendering portal) means online portal on which Bidders are required to submit their bid. For this RFQ, e tendering websiteis **https://eprocure.gov.in/eprocure/app**

(f) Unless mentioned otherwise, the term ‘Bid Due Date’ shall mean the ‘Final Bid Due Date’.

(g) “Instructions to Bidders” shall mean the documents describing the manner in which Bidder shall prepare and submit his bid.

(h) The term “bid”/ “tender” / “offer” / “proposal” and their derivatives (“RFQ/Bidding/Enquiry” documents, “bidder/tenderer”, “Vendor/Supplier/Seller”, “Bid/tender”, “bidding/tendering”, “Contract/Purchase Order” etc.) are synonymous.

(i) “Tender Document” or “Bidding Document” shall mean the documents issued to the bidder and/ or uploaded on tender portal, including any subsequent addenda to enable bidder submit his Bid.

(j) “Bidder” or “Tenderer” shall mean the person or company who receives the Tender Document and submits Tender or Bid to EIL either in response to Limited tendering or Open tendering.

(k) Material Requisition (MR) means the Technical Part of RFQ Document.

(l) **INCOTERM 2020:** INCOTERM 2020 means the terms which shall be applicable for procurement of equipment/material under the subject RFQ / Enquiry document.

(m) BoQ/ Price Schedule (PS) / Schedule of Rate (SOR)/ Schedule of Prices (SOP) shall have the same meaning.

1.3 The successful bidder / “supplier” shall complete the Scope of RFQ within the Time Period/Completion Period stated in RFQ document.

2.0 CORRUPT AND FRAUDULENT PRACTICES

2.1 The Owner requires that Bidders/ Vendors/ Supplier observe the highest standard of ethics during the award/ execution of Contract. "Fraudulent Practice" means a misrepresentation of facts in order to influence the award of a Contract to the detriment of the Owner, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the owner of the benefits of free and open competition.

2.2 The Owner will reject a proposal for award if it determines that the bidder recommended for award has engaged in fraudulent practices in competing for the Contract in question.

2.3 Bidder is required to furnish the complete and correct information/ documents required for evaluation of their bids. If the information/ documents forming basis of evaluation is found to be false/ forged, the same shall be considered adequate ground for rejection of bids and forfeiture of Bid Security.

2.4 In case, the information/ document furnished by the Bidder/ Vendor/ Supplier forming basis of evaluation of his bid is found to be false/ forged after the award of the contract, Owner shall have full right to terminate the contract and get the remaining job executed at the risk & cost of such Bidder/ Vendor/ Supplier without any prejudice to other rights available to Owner under the contract such as forfeiture of CPBG, withholding of payment etc.

2.5 In case, this issue of submission of false documents comes to the notice after execution of supply/work, Owner shall have full right to forfeit any amount due to the Bidder/ Vendor/ Supplier along with forfeiture of CPBG furnished by the bidder/vendor/ Supplier.

2.6 Further, such bidder/ vendor/ Supplier shall be put on Blacklist/ Holiday/ Negative Suspension/Banning List of Owner debarring them from future business with EIL/Owner for a time period, as per the prevailing policy in Owner/EIL.

2.7 EIL, being the Consultant for the Owner in this Project reserves the right to take action against the defaulting Bidder/supplier/contractor in this tender/PO/ Contract including putting the Bidder/supplier/contractor on the Suspension/ Banning list of EIL. For this purpose, EIL may decide the same considering the communications carried out by the client with the Bidder/supplier/ contractor (including show cause notice/ personal hearing, etc).

2.8 In case any bidder is found to be involved in cartel formation/ bid-rigging /collusive bidding, his bid will not be considered for evaluation/ placement of order. Such bidder will also be debarred from bidding in future.

3.0 ELIGIBLE BIDDERS

3.1 An Eligible bidder may be a firm or a company, who, have been issued/intimated for issuance of RFQ/LIB Document on Limited Competitive Basis or a bidder meeting the BQC criteria as per) Invitation for Bids (IFB)/ Notice Inviting Tender (NIT) on Open Competitive basis. **(Refer BDS)**

3.2 In case of limited competitive basis, the bidding is open only to the bidders to whom Bidding Document has been issued or intimation for issuance of Bidding Document has been sent through EIL tender portal. Refer BDS for type of bidding.

3.3 In case of open competitive basis, the bidding is open to the bidder who intends to submit the Bid, in response to IFB/NIT.

3.4 A bidder who is on **Black-listing / Holiday Listing /Suspension / Banning List/ Negative List** of EIL/PLL on due date of submission of bid / during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/evaluation/award.

Similarly, if a bidder is seeking qualification based on engaging a sub-contractor / sub-vendor who meets stipulated qualification criteria (in case allowed as per IFB/NIT) and such a sub-contractor / sub-vendor is on Black-listing / Holiday Listing /Suspension / Banning List/ Negative List of EIL / PLL on due date of submission of bid / during the process of evaluation of the bids, the offer of such bidder shall not be considered for bid opening/evaluation /award.

3.5 Bidder should be not under Liquidation, Court receivership or similar proceedings. Bidder to submit self-certificate in this regard.

In case Bidder(s) affirms that present litigations/arbitrations have impact on their obligations to perform the Contract or doesn't provide the affirmations as above, their bids shall be rejected.

Note : In case it comes to the notice of PLL/EIL that the bidder has given wrong declaration in this regard, the same shall be dealt as 'fraudulent practices' and action shall be initiated as per the procedure for action in case of corrupt / Fraudulent / collusive / coercive practices.

3.6 Bidder to comply the guidelines of Department of Expenditure (DOE)vide O.M. No. 7/10/2021-PPD (1) dated 23.02.2023for Restriction on procurement from Bidders from Country(ies) sharing Border with India. Refer Cl. No. 44 of this ITB for details.

3.7 The bidder found to have a conflict of interest shall be disqualified.

Bidder's conflict of interest as Consultant of EIL/ Owner:

Consultants or any of their Affiliates will not be considered for any assignment, which by its nature may be in conflict with another assignment of the consultants.

Bidder's conflict of interest with other bidders:

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Owner's interests. The bidder found to have a conflict of interest shall be disqualified

A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:-

a. they have controlling partner(s) in common; or
b. they receive or have received any direct or indirect subsidy/ financial stake from any of them; or
c. they have the same legal representative/agent for purposes of this bid; or

d. they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or.
e. Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid;
f. In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.

3.8 The Bidder shall not be under a declaration of ineligibility by Purchaser for Corrupt/ Fraudulent/ Collusive/ Coercive practices, as defined elsewhere.

B CONTENTS OF BIDDING DOCUMENT

4.0 BIDDING DOCUMENT

4.1 The RFQ document consisting of Commercial & Technical Section has been hosted on e-procurement website (i.e. https://eprocure.gov.in/eprocure/app). However, a link shall be provided in EIL website http://tenders.eil.co.in.

4.2 The Bidding Document shall in general consist of the following and should be read in conjunction with any amendment issued in accordance with Clause No. 7 of ITB.

- Invitation for Bid (IFB)/ Request for Quotation (RFQ).
- Bid Data Sheet
- Instructions to Bidders and its attachments/annexure.
- Bidding Forms
- Format for Performance Bank Guarantee and Bank Guarantee for Advance
- Packing, Marking, Shipping and Documentation Specification
- Additional Documents Mentioned in RFQ /LIB/BDS
- General Conditions of Contract (GCC) for Goods.
- Special Purchase Conditions (SPC) and its Annexure.
- Schedule of Rates (SOR)/ Schedule of Prices (SOP).
- **Material Requisition (MR)** comprising Scope details, data sheet, Technical Specifications / Standards, Drawings, if any Drawings, if any

4.3 Although all the details presented in this Bidding Document have been compiled with reasonable care, the bidder is expected to examine the Bidding Document, including all instructions, forms, terms, specifications and drawings in the Bidding Document and it includes all the documents as per Table of Contents. In case of any ambiguity or incompleteness, the bidder must bring it to the attention of EIL immediately and prior to submission of Bid.

4.4 The bidder is expected to examine the RFQ document downloaded from the e-Procurement Portal, bidding guidelines receipt from EIL or available on EIL website, all instructions, formats, terms, specifications and drawings etc., enclosed in the RFQ

documents. The invitation for bid (bidding) together with all its attachment thereto, shall be considered to be read, understood and accepted by the bidder in co-ordination to each other. Failure to furnish all information required by the RFQ documents or submission of a bid not substantially responsive to the RFQ documents in every respect will be at bidder's risk and may result in the rejection of the Bid.

4.5 Without prejudice to provisions indicated elsewhere, Bidding document once issued in case of limited competitive bidding is non-transferable. However, in case of Open Competitive Bidding, since the Bidding Document is available for free downloading on the portal, any bidder may submit the Bid and the same shall be evaluated in line with the provisions of the Bidding Document.

4.6 Order of precedence

The documents forming the Purchase Order are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the Term & Conditions defined in the various documents, the order of Precedence shall be as follows:

i. Purchase Order and its enclosures along with Purchase Requisition
ii. Amendment to Bidding Document, if any
iii. Bid Data Sheet (BDS)
iv. Job Specifications
v. Drawings
vi. Technical specifications
vii. Special Purchase Conditions (SPC)
viii. General Conditions of Contract (GCC) for Goods & Packing, Marking, Shipping and Documentation Specification
ix. Request for Quotation (RFQ)/Invitation for Bids (IFB)
x. Instructions to Bidders (ITB)
xi. Other Documents

A variation or amendment issued after the execution of the formal contract shall take precedence over respective clauses of the formal contract and it's Annexures.

5.0 SITE VISIT

5.1 For Scope involving Site Work, bidder, if required, may visit and examine the Project Site and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid.

5.2 Bidder is advised to visit and examine the site (at his own cost), its surroundings and familiarise themselves of the existing facilities & environment, and collect all other information which he may require for preparing and submitting the bid and entering into the Contract. Claims and objections due to ignorance of existing conditions or inadequacy of information will not be considered after submission of the bid and during implementation.

Bidder shall provide at least two days in advance the details of their representatives along with details of laptop, mobile or any other electronic device or any equipment if any, being carried so as to make arrangement for gate passes. Owner's decision on this regard shall be final and binding upon the bidder.

5.3 Bidder and any of its personnel will be granted permission by EIL/Client to enter upon its premises and lands/ Project Site for the purpose of such visit, but only upon the express condition that the bidder and its personnel will relieve and indemnify EIL/Client and its personnel from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

5.4 For site visit, Bidder may contact the following person:

Mr. Pramod Tiwary, GM (Construction) • Projects
Mail id - pramodtiwari@petronetlng.in
Contact - 95582 53796
Petronet LNG Limited
Denotified SEZ Z/97, Z/98, Z/99
Petronet LNG Petrochemical Project

6.0 CLARIFICATION OF BIDDING DOCUMENT, PRE-BID MEETING & SITE VISIT

6.1 The enquiry is issued on **"Zero Deviation Bidding"** basis wherein no post bid correspondence of any nature may be entertained. Bidders in their own interest are advised to take part in the pre-bid meeting seriously by issuing their genuine queries and also by attending the pre-bid meeting by their competent personnel. This will help bidder not only to cut short of the evaluation time leading to requirement of shorter bid validity but also enable them to submit their best prices based on the clear techno-commercial scope.

6.2 Pre-bid meeting shall be attended by competent representative(s) of the bidder.

6.3 Bidder's authorized representative(s) shall attend the pre bid meeting on the prescribed day at the given venue specified in RFQ. During the pre-bid meeting, all the technical and commercial issues shall be discussed and concluded to ensure that the bid received subsequent to pre bid meeting shall be without any deviations to terms and conditions. Hence, bidders shall treat the pre bid meeting as utmost important and depute competent & senior person capable of taking on the spot decision to sort out all the technical and commercial issues.

However, in case any bidder does not attend the pre bid meeting, it shall be understood that the bidder has a clear understanding of the scope, terms & conditions of the bidding document and does not have any comments/ deviations to the requirements of the bidding document.

6.4 In order to ensure fruitful discussions during pre-bid meeting, the bidder is requested to submit any queries/clarification/information pertaining to Bidding document in writing in the format provided in Bidding Forms.

Bidder shall submit their queries only through NIC CPP portal strictly on or before cut-off date mentioned in IFB/LIB after which, EIL shall reserve the right not to

entertain any queries. Queries sent through e-mails or any other mode by any bidder may not be given any cognizance.

Bidder shall submit their queries strictly within cut-off date after which, EIL/Owner shall reserve the right not to entertain any queries.

6.5 The bidders are required to participate in the pre-bid meeting after going through the entire bidding document along with BQC. Bidder shall come with all technical and commercial points on which they need clarifications and also to ensure that they possess all the supporting documentation for meeting the BQC. In case of any doubt, they may discuss the same during the meeting to avoid any techno-commercial clarifications/ discussions post bid.

6.6 Replies to the pre-bid queries will be uploaded on e-procurement CPP portal expeditiously as possible. After cut-off date for submission of pre-bid queries, no further queries will be entertained from the bidders. The response of EIL shall not form part of the Bidding Document unless issued as an Addendum/ Amendment.

6.7 Any modification of the Bidding Document, which may become necessary as a result of the pre-bid discussion, shall be intimated to all bidders through the issue of an Addendum/Amendment.

6.8 The applicable Form towards compliance to Bid Requirements & conforming no-deviation and techno-commercial compliance shall be signed and submitted by the bidders as part of their offer. Bidder in their own interest shall submit bid fully complying with Bidding Document requirements and EIL shall reserve the right to proceed with the available compliant bids for evaluation without raising any technical/ commercial queries.

6.9 Technical/ Commercial queries (TQ/CQ) shall not be issued once the bid have been opened. However, wherever CQ/ TQ are unavoidable, the same shall be raised and the cut-off date given for CQ/ TQ replies shall be adhered to. CQ/ TQs shall be issued through E-tendering portal and Bidder shall submit their replies through E-tendering portal only. Accordingly, CQ/ TQ replies through any other mode (e-mail, physical form) shall not be accepted. Offers shall be evaluated based on the information available upto cut-off date for CQ/ TQ replies. Bidder shall not submit any Price/ Price implication against TQ/ CQ raised unless specifically sought in writing.

7.0 AMENDMENT OF BIDDING DOCUMENT

7.1 At any time prior to the deadline for submission of bids, EIL may, for any reason whether at his own initiative or in response to the clarification requested by the prospective bidder(s), issue amendment in the form of Amendment/ Addendum/Corrigendum.

7.2 Any addendum issued shall be part of the Bidding Documents and shall be uploaded on e-procurement CPP portal. However, Record Notes of Pre-bid Meeting/ Reply to Pre-bid Queries containing clarification shall not be considered a part of bidding document.

7.3 To give bidders reasonable time in which to take an addendum into account in preparing their bids, EIL may extend the deadline for the submission of bids, pursuant to Clause 22.3 of ITB.

7.4 In exceptional circumstances, EIL may also for any reason issue amendment subsequent to opening of un-priced bids. Any amendment thus issued shall become part of Bidding

Document. Bidder shall follow the instructions issued along with Amendment with regard to submission of impact on quoted price / revised price, if any.

8.0 ACKNOWLEDGEMENT & CONFIRMATION

8.1 Within 3 days of downloading of Bidding Document, bidder shall acknowledge and confirm his intention to bid for the tendered work on EIL website http://tenders.eil.co.in.

8.2 In case of limited competitive bidding, Bidders should respond to this enquiry either by submitting their bids or chooses to regret by explaining the reason for non-submission of the offer. In case there is no response either way continuously, the bidder may be liable for suitable action including review of their enlistment with EIL for that particular item.

C PREPARATION OF BIDS

9.0 COST OF BIDDING

Bidder shall bear all costs associated with the preparation and submission of their Bid, and EIL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10.0 ZERO DEVIATION:

10.1 Bidders to note that enquiry is issued on Zero deviation basis. Bids are to be submitted on Zero deviation basis and in strict compliance with the terms & conditions, scope, specifications and other stipulations contained in the tender/ enquiry without any deviations.

10.2 In view of this Bidder shall ensure submission of complete bid without any deviation as per requirement of Bidding Document in first instance itself.

11.0 LANGUAGE OF BID

11.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the bidder and EIL/Owner, shall be in the English language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11.2 In the event of submission of any document/ certificate by the bidder in a language other than English, the bidder shall get the same translated into English. The English translation copy of the same shall also be furnished duly certified, stamped and signed by Local Chamber of Commerce or Indian Embassy in their country or their Embassy in India or any translator in India recognized / authorized by their Embassy.

12.0 DOCUMENTS COMPRISING THE BID

Electronic Bids (e-bid) in two parts i.e. PART-I (Techno-commercial part) & PART-II (Priced part) as detailed below shall be submitted in e-tendering portal in accordance with the instructions and terms & conditions enclosed with the Bidding Document.

12.1.1 SUBMISSION OF PHYSICAL DOCUMENTS

Bid Security in Original (if applicable) shall be submitted as per the cutoff date mentioned in IFB/LIB/BDS.

12.1.2 PART - I - TECHNO-COMMERCIAL/ UNPRICED BID

(a) Scanned copy of Bid Security along with SFMS confirmation/"SWIFT message" as per Clause 19 of ITB (to be uploaded in "FEE FOLDER" in e-tendering portal).

(b) Scanned copy of certified BQC documents (Technical as well as Financial) (as per IFB), wherever applicable;

(c) Scanned copy of Integrity Pact duly signed on each page by authorized signatory, wherever applicable as enclosed in the Bidding Forms.

(d) Amendment /addendum (if any);

(e) Power of Attorney and/or Board Resolution in favour of authorised bid signatory

Note: All documents files of the bid shall be e signed and uploaded by using the digital signature issued in the name of person having valid POA at the time of bid submission.

(f) Copies of documents defining constitution or legal status, place of registration and principal place of business of the Company.(*Not required in case of Limited RFQs*)

Organization details

- In case of a proprietorship firm, the name and address of proprietor, and certified copy of Bank Account Details.
- In case bidder is a partnership firm, certified copy of the partnership deed.
- In case of company (whether private or public), certified copy of the `Certificate of Incorporation' together with certified copy of Memorandum/Articles of Association

(g) Agreed Terms & Conditions for Indigenous Bidder or Indian Sub-supplier of Foreign Bidder;

(h) Agreed Terms & Conditions for Foreign Bidder;

(i) Bank Mandate Form with cancelled cheque duly signed and stamped with the Banker's certification as per **Form-A**;

(j) Unpriced copy (without price) of Price Schedule duly indicating 'Q' for Quoted / 'NQ' for Not Quoted, in accordance with the instructions mentioned therein.;

(k) Compliance to requirement of PAN, tax residency certificate and form no.10*F* as per relevant form*s* provided in annexure to SPC (**applicable for foreign bidder** in case of services in India is rrequired as per scope of Bidding document);

(l) Signed and stamped copy of Form-IA/II, as applicable (on Company's Letterhead) attached with Annexure-II of ITB in line with Government guidelines regarding procurement from bidders from a country or countries sharing Land Border with India;

(m) any other document **required as per, Technical Specifications; and**

(n) any other document **required in the BDS**.

Note: The above shall be uploaded in "PREQUAL/ TECHNICAL" folder in e-tendering portal.

12.1.3 PART-II (Priced Bid)

(a) Price Schedule with prices filled in. The rates are to be filled in accordance with instructions provided in Preamble to Schedule of prices, in e-tendering portal, without making any changes in the format/names of the file/worksheet.

Deviations to terms and conditions, presumptions, overwriting etc shall not be stipulated in Price part of bid. In case of any conditions stipulated in price bids, the bids of such bidders shall be summarily rejected and shall not be considered for further evaluation. Evaluation shall be carried out excluding such bidder(s.)

Note:

a) Part-II shall be uploaded in "FINANCE" folder in e-tendering portal.

b) Bidder to note that if they submit prices in un-priced part of their bid, such prices shall not be considered. The prices as submitted in the price part only shall be considered for evaluation and ordering, if any. If prices are not found in the price part and even if mentioned elsewhere, the bid shall be rejected.

13.0 INTEGRITY PACT (applicability shall be as per IFB/LIB/RFQ)

PLL, as one of its endeavor to maintain and foster most ethical and corruption free business environment, have adopted the Integrity Pact to ensure that all activities and transactions between the Company (PLL) and its Counterparties (Bidders, Contractors, Vendors, Suppliers, Service Providers/Consultants etc.) are handled in a fair and transparent manner, completely free of corruption.

13.1 Bidder shall submit, the scanned copy of the Integrity Pact (**enclosed in the bidding document**) duly signed and stamped as a token of compliance in Part-I of the Bid, wherever required as per Bid Data Sheet. **Non-submission of Integrity pact in the bid shall be a ground of disqualification. However, in case of non-submission of Integrity Pact in the bid, an opportunity shall be given in the CQ to submit the Integrity Pact, provided bidder has declared Integrity Pact submission confirmation in their bid. Hence, only those bidders shall be given opportunity to submit IP who have confirmed to submit the same in their original bid.** Copy of the Integrity Pact is available in Bidding Document. Further, if the Integrity Pact submitted in the bid is carrying certain shortcomings / deviations, the bidder shall be asked to clarify or make simple corrections through CQs.

13.2 For details of Independent External Monitors (IEMs)appointed by PLL, refer the IFB/LIB (as applicable).

No deviations / modifications in IP shall be acceptable. Bidder shall submit the same format of signed integrity pact (as provided in the bidding document duly signed by the buyer), duly filled-in, signed & stamped by the authorized signatory of bidder.

Integrity Pact shall be signed by

a) authorized signatory of the bid, in case of Company

b) the Proprietor, in case of Proprietorship firm
c) at least two Partners, in case of Partnership firm

14.0 ALTERNATIVE OFFER / MULTIPLE BIDS

14.1 A bidder (i.e., the bidding entity) shall, on no account submit more than one bid either directly (as a single bidder or as a member of consortium) or indirectly (as a sub-contractor) failing which following actions shall be initiated:

(a) All bids submitted by such bidder (say 'A') as a single bidder or as a consortium, shall stand rejected and BID SECURITY, if any, in case of all such bids submitted by bidder 'A' shall be forfeited.

(b) If another bidder (say 'B') has proposed bidder 'A' as a sub-contractor then bidder 'B''s bid shall also be rejected. However, in case the bidder 'B' has also proposed an alternative sub-contractor who is other than the bidder 'A', then bidder 'B''s bid shall be evaluated with the proposed alternative sub-contractor only. Hence, every bidder shall ensure in his own interest that his proposed sub-contractor is not submitting alternative/ multiple bids.

Note: However, in case EIL has proposed a list of sub-contractors/ sub-vendors in the enquiry document itself which shall be common for all the Bidders, the provisions at (b) above shall not be applicable. It is further clarified that:

- A sub-Contractor can be common to more than one Bidder, provided the sub-Contractor themselves are neither a Bidder nor a consortium member.
- Where an Enquiry has multiple Parts, the above condition shall be applicable individually for each Part, as if it is a separate Enquiry.

15.0 BID PRICES AND DISCOUNTS

15.1 The prices must be quoted strictly in the format of Price Schedule/SoR/BoQ provided in the Bidding Document. Bidder shall not quote any discount separately for any item or on overall price. Conditional discount, if offered, shall not be considered for evaluation.

15.2 Unless stated otherwise in the Bidding Document, the Contract shall be for the total works as described in Bidding Document, based on the Schedule of Rates/ Price schedule submitted by the bidder and accepted by EIL.

15.3 Rates/ prices quoted by the bidder, shall remain firm, fixed and valid till the completion of the Works and will not be subject to variation on any account except as otherwise specifically stated in the Bidding Documents.

15.4 It shall be the responsibility of the Bidder to duly enquire of their own and comply with all applicable laws, rules, regulations, orders and formalities applicable to Goods and Services Tax (GST), Custom Duty etc. on the manufacture, sale and/or supply of any material / services to Owner / EIL. It is clearly understood that Owner/ EIL will not have any additional liability towards payment of applicable Taxes & Duties as a result of Bidder's wrong assessment / interpretation of applicable taxes & duties.

15.5 All duties, taxes, and other levies payable shall be as per Annexure-II of Special Purchase Conditions.

15.6 **The Bidder shall keep the Owner / EIL indemnified from and against any and all claims, demands, prosecutions, penalties, damages, demurrages and/or other levies whatsoever** made or levied by any Court, Tribunal or the Customs or other Authorities with respect to any alleged breach, evasion or infraction of such duties, taxes, charges or levies or any breach or infraction of such laws, rules, regulations, orders or formalities concerning the same and from the consequence thereof.

15.7 Foreign Exchange rate variation shall not be provided.

16.0 CURRENCIES OF BID AND PAYMENT

Currency of bid shall be as specified in Special Purchase Conditions. Payment shall be made in respective currency of quote only.

17.0 QUALIFICATION OF THE BIDDER

17.1 In case bidding document contains Bidder Qualification Criteria (BQC), Bids of only those bidders who are found to qualify based on the Qualification Criteria specified in the IFB/LIB shall be considered for detailed Techno-Commercial evaluation. Decision of EIL/PLL in this regard shall be final and binding.

18.0 PERIOD OF VALIDITY OF BIDS

18.1 Bids shall remain valid for the period specified in the **IFB/LIB/RFQ** after the bid submission deadline date prescribed by EIL in accordance with Clause 22.0 of ITB. A bid with shorter validity shall be rejected by EIL as non-responsive. Bidders shall not be entitled during the above period, without the consent of EIL in writing, to revoke or cancel their Bid or to vary the Bid given or any term thereof. In case of bidders revoking or cancelling their Bid or varying any terms in regard thereof without the consent of EIL/Owner in writing, EIL/Owner shall forfeit Bid security, submitted along with the bid and shall reject their bids. Such Bidder may also be put on Black list / Holiday list/ Negative List/Suspension/Banning List.

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, EIL may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with Clause 19 of ITB, it shall also be extended for 30 days beyond the deadline of the extended bid validity period. A bidder may refuse the request without forfeiting its bid security. A bidder granting the request shall not be permitted to modify its bid.

19.0 BID SECURITY / EARNEST MONEY DESPOSIT [Refer IFB/LIB/RFQ for applicability]

19.1 Bids must be accompanied with Earnest Money Deposit / Bid Security in favour of “Petronet LNG Limited” payable at “New Delhi”. Bids not accompanied with requisite Earnest Money deposit /Bid Security (or valid Udyam Registration Certificate, wherever applicable) shall be considered as non-responsive and such Bids shall be summarily rejected.

19.2 Bidder shall furnish Bid Security, in original form, as part of its bid, in the amount and currency specified in the Enquiry. Any bid not accompanied with a requisite Bid security or the Bid Security not being for the required amount, shall be summarily rejected by EIL/Owner. Format of Bank Guarantee for Bid Security is provided in Bidding Forms.

19.3 Bidder shall be required to upload the scanned copy of original bid security (or documentary proof claiming exemption, wherever applicable) within the final extended bid due date and time on the e-tendering portal. If the Bidder fails to submit Bid Security physically in original or upload copy of the same on the e-tendering portal within the cut-off date as per the bidding document, his bid shall be rejected and not considered for further evaluation. Uploading as well as submitting original Bid Security within the cut-off date is mandatory.

19.4 Apart from hard copy submission of BGs, bank guarantee issued towards EMD/CPBG/ABG, etc, it shall be ensured that same is also routed through SFMS platform (Structured Financial Messaging System)/SWIFT message (from foreign bidders) for Bank Guarantee issuance and verification. The information/ messaging (as per SFMS platform) shall be sent by BG issuing bank branch to PLL's Banker. Failure to adhere to this requirement may render the bid liable for rejection.

19.5 Owner shall not pay any interest on Bid Security furnished. Further, in case bid security submitted is found to be fake, bid of such bidder shall be rejected and may initiate action as deemed necessary as per EIL /Owner Policy.

19.6 The bid security submitted by Indian bidder, shall be in the form of Bank guarantee, in favour of Petronet LNG Limited from any schedule Indian Bank or any branch of international bank situated in India and registered with RBI as schedule foreign bank.

19.7 In addition to above, Indian bidder can also submit the EMD through PLL Online EMD Tender Fee Collection portal (detailed procedure attached as Annexure-VI to ITB/LIB), the link for the same is mentioned in IFB/LIB. Bidders shall be required to submit/ upload the successful transaction details along with their bid/e-bid. In absence of submitting/ uploading the remittance details, the bid is likely to be considered as bid not accompanied with EMD.

Further, in case of the online transaction, submission of EMD in original is not applicable.

19.8 Foreign bidders shall submit unconditional Bank Guarantee from any schedule bank in India or from an international bank who has its Branch in India and registered with RBI as schedule foreign bank incorporated in India strictly in the format provided in Bidding Forms to be denominated in the currency of contract for the amount as applicable may be accepted.

BG issued by any foreign bank, which is not a scheduled bank in India shall be accepted provided that Bank Guarantee issued by such bank is counter guaranteed by any Schedule Bank incorporated in India.

19.9 Bank Guarantee shall be valid for One Month beyond the validity period of the bid, or beyond any period of extension if requested under Clause 18 of ITB. In case of extension in original bid validity by more than 15 Days, the Bid Security validity shall be extended accordingly.

19.10 Exemption from submission of Earnest Money Deposit shall be as indicated below:

a) In case of Micro and Small Enterprise, only Udyam Registration certificate shall be considered for availing the benefit of EMD exemption. Irrespective of the product

category, exemption from payment of EMD shall be given to all eligible MSEs, except for Traders and in Works contracts.

b) If the MSE bidder does not provide Udyam Registration Certificate or bid security/EMD along with the e-bid to substantiate their MSE status, such offer of such MSE bidder shall be rejected.

In case an MSE bidder has submitted Udyam Registration No. but scanned document is not uploaded along with Bid on e-tendering portal, the same can be accepted provided a valid MSE Certification is available on Government Udyam Registration portal.

c) The Udyam Registration Certificate shall be verified from GoI Udyam registration portal (Present web address is https://udyamregistration.gov.in/Udyam_Verify.aspx). The status of MSE Bidder as on date of Unpriced Bid Opening shall be considered for EMD exemption benefit.

19.11 Return of bid security:

a) EMD of late bids/ where unpriced bids not opened, shall be returned after Unpriced bid opening.

b) EMD of Bidders whose price bids are not opened shall be returned after Price Bid opening.

c) EMD/ Bid securities of unsuccessful bidders will be returned upon placement of order/ award.

d) In case of the successful Bidder, the same will be returned after the order/ contract is effective and Contract Performance Bank Guarantee is submitted.

e) However, in case EIL/Owner decides to cancel / annul the Enquiry / bidding document at any stage during the bidding process but before the award of work/ items (as applicable), EMD of the bidders shall be returned at the earliest from the date of such decision.

19.12 The bid security shall be forfeited:

(a) If the offer is withdrawn within the Bid validity.

(b) If the bid is altered/ modified within its Bid validity

(c) If the bidder does not accept the LOA issued within the Bid validity.

(d) If the bid is accepted by Petronet LNG Limited and work awarded but the contractor does not furnish Contract Performance Security.

(e) If the bidder submits the forged document and is indulged in the fraudulent practice the EMD shall be enchased, further the bidder should be put on holiday after following the due process.

Note: In case of forfeiture of EMD/ Bid Security, the forfeited amount will be considered inclusive of tax and tax invoice (if applicable) will be issued by PLL. The forfeiture amount will be subject to final decision of PLL based on other terms and conditions of order/ contract.

20.0 FORMAT AND SIGNING OF BID

20.1 Bids shall be signed by the authorized signatory of the bidder.

20.2 Bidder shall submit a Power of Attorney in favour of authorized bid signatory(ies) and Digital signatory . Requirements for submitting the Power of Attorney (POA) shall be as follows:

i) Company:

- Bidder shall submit a specific Power of Attorney for the enquiry in the name of authorized person. OR
- In case Bid signatory has General Power of Attorney or has the power as per their Board resolution, the same shall be submitted duly certified by Notary Public or CEO/CFO/Company Secretary (CS)/Member of Board of Directors. OR
- In case, Bid is signed by CEO/CFO/CS/any member of board of Directors, no separate POA is required, provided the documentary evidence of their being CEO/CFO/CS/any member of board of Directors is reflected in the MOA/AOA/Financial Statements, else submitted separately in the Bid.

ii) Partnership Firm: In such case,

- Bid can be signed by all the partners of the Firm and in such case no separate POA is required. OR
- Bid can be signed by any of the Partner(s) holding Power of Attorney as specified in the Partnership Deed, OR
- Bid can be signed by an authorized person and shall submit a specific POA for the Enquiry duly signed by all the Partners.

Bidder shall submit the copy of Partnership Deed.

iii) Limited Liability Partnership (LLP) Entity:Bid shall be signed by the person

- holding Power of Attorney as per the registered LLP Agreement for the Firm, OR
- has the power as per their Board resolution, OR,
- having a specific POA for the Enquiry duly signed by all the LLP Partners.

Bidder shall submit (i) a copy of LLP Agreement, and (ii) a copy of Certificate of Incorporation.

iv) Proprietorship: Proprietor shall sign the Bid. Bidder shall also submit a copy of (i) PAN card and (ii) Bank Mandate Form, duly certified by the Bidder's Banker.

v) For Indian Bidder, POA shall be on non-judicial stamp paper of minimum value of INR 100/- and duly Notarized by a Notary Public in India.

For Foreign Bidders, POA shall be:

- on the Stamp Paper of appropriate value or engraving/embossing, in lieu of nonjudicial stamp paper, as per applicable laws in Bidder's Country; or

- as per any other system prevailing in the bidder's country for the purpose of issuing POA.

vi) Specific POA issued for the Enquiry shall confirm that the authorized signatory have been authorized to do in the name and on behalf of the Company/Firm all or any of the acts, deeds or things necessary in connection with or incidental to the Bid submitted by the bidder for the subject Enquiry Document, including but not limited to the signing and submission of bid, participating in the meetings, responding to queries, submission of information / documents and generally to represent us in all the dealings with EIL/Owner or any person, in connection with the works, without any prejudice, limitations and exceptions till the completion of the bidding process.

20.3 Bidders to upload the Un-price and Price part of their e-bids strictly in the Un-price & Priced folders respectively at the designated place in the e-tendering portal. Non-Compliance to the same may lead to rejection of their Bids.

20.4 DIGITAL SIGNATORY:

i) The e-bid shall be digitally signed (e-signed) using the digital signature of a person duly authorized to sign on behalf of the bidder. The digital signature used for signing the bid shall be issued in the name of such authorized person and the certificate details, available from the signed documents, should indicate the details of the signatories. Any consequences resulting due to such signing (e-signing) shall be binding on the bidder.

ii) In case foreign bidder does not have digital signature issued by an Indian certifying authority, he can authorize his Indian representative to use the representative's digital signature to upload the bid on behalf of foreign bidder. In such a case, the authorization letter from foreign bidder to his Indian representative shall be submitted along with the bid.

iii) All documents as submitted in the e-Procurement Portal using digital signature at any time during the Bidding process shall be deemed considered signed by the authorized signatory only, irrespective of authorized signatory's signature on all pages or not.

D SUBMISSION AND OPENING OF BIDS

21.0 SEALING AND MARKING OF BIDS

21.1 The bidder shall submit the, original Bid Security along with other documents requested in "Original", as per the requirement of relevant clause of ITB, in separate sealed envelopes, duly marking the envelopes as per following:

Part III -Original Bid Security
Name of Work : _____
Bidding Document No. : _____
Due date & Time of Submission : _____
From : _____ [Name & Address of Bidder]

21.2 The envelope shall bear the name and address of the bidder and bear a warning not to open before the time and date for bid opening.

21.3 If all envelopes are not sealed and marked as required, EIL will assume no responsibility for the misplacement or premature opening of the EMD.

21.4 Bidders shall submit bids (**Part-I & Part-II**) electronically and shall follow the electronic bid submission procedures **enclosed as Annexure-I to this ITB.**

22.0 DEADLINE FOR SUBMISSION OF BIDS

22.1 Bidders shall submit their bids electronically in the e-tendering portal, within the date and time **specified in the RFQ/IFB or any extensions thereof**. Bidders submitting bids electronically shall follow the electronic bid submission procedures **enclosed as Annexure-I to this ITB**.

No Physical bid shall be permitted other than submission of the documents categorically asked for in hard copies as part of e-bids submitted online through the e-tendering Portal. The bids submitted online through e-tendering Portal shall only be considered for evaluation and ordering. The e-bid must be complete in all respects, leaving no scope for ambiguity. Bidder shall be fully responsible for the bid submitted in e-tendering portal and no relief or consideration can be given for errors and omissions.

22.2 Bid Security in accordance with ITB 19 in original, must be received by EIL at the address and no later than the date and time for submission of Bids **specified in the RFQ/IFB.**

22.3 EIL/Owner may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with Clause 7.0 of ITB, in which case all rights and obligations of EIL/Owner and bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

22.4 Bidder should avoid the last hour rush to the website wherein bidder is likely to miss the deadline for bid submission. Due date extension request due to above reason shall not be entertained.

23.0 LATE BIDS

23.1 E-tendering system shall close immediately after the deadline for submission of bid. Any bids being submitted in physical form (other than EMD) shall not be considered for opening / evaluation / award and will be returned to such bidders.

23.2 In the event the Bid Security in original, in accordance with ITB 12.1.1, are not submitted within the deadline for submission of bid security, the bids shall be declared late and shall not be considered for further evaluation, notwithstanding the fact that the bid security has been submitted in electronic form within the deadline.

23.3 Unsolicited bids or bids being submitted to place/website other than one specifically stipulated in the RFQ documents shall not be considered for opening/evaluation/award.

24.0 WITHDRAWAL, SUBSTITUTION, AND MODIFICATION OF BIDS

24.1 The bidder may modify, re-submit or withdraw its e-bid after the bid submission, but, before the due date and time for submission of Bid following the electronic bid submission procedures**.**

24.1 There are two specific features in NIC- Central Public Procurement Portal (CPPP) viz, “Withdraw” and “Re-Submission”. Bidders should not use the feature “withdraw” unless they have decided to withdraw their bids. It is to be noted that once “withdraw” feature is used they will not be allowed to re-submit their bid against this Bidding Document. In case a Bidder desires to change his bid for any reason before bid due date, Bidder shall use “Re-Submission” feature.

24.2 No bid shall be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity or any extension thereof.

24.3 In case bidder fails to accept the order or withdraw the bid after bid submission, punitive action shall be taken against them as per the EIL/PLL Policy.

25.0 BID OPENING

25.1 EIL shall open bids received in the e-tendering portal except bidders who are on Holiday/ Suspension / Banning list of EIL / PLL.

25.2 EIL shall verify the availability of scanned copy of Bid security is uploaded in Part-I of e-bid during un-priced bid opening.

25.3 Except in the cases specified in ITB 23.2, EIL shall open Part-I of all bids received in the e-tendering portal.

25.4 The order of part wise opening of bids shall be as follows;

(i) On scheduled date and time of UNPRICED bid opening,

(a) Scanned Copy of Original Bid Security submitted in e-bid shall be opened first and verified that whether Bid Security has been furnished as per bid requirement.

(b) Upon meeting the requirement of Bid Security as per Clause (a) above, Opening of documents of Part–I, submitted in electronic form shall be processed on the e-Procurement module of the e-tendering portal.

(c) If a bidder has not complied with Bid Security requirement a) above, such bidder’s offer shall be rejected out rightly.

(ii) Part-II of bid of only those bidders whose bids is determined to be technically and commercially acceptable by EIL shall be opened. Bidders selected for opening of their priced bids shall be informed about the date, time and place of price bid openingand shall not be called for physical participation during bid opening.

25.5 In case the enquiry is issued on Composite Bidding i.e. single stage single bid basis, (as per RFQ/BDS), unpriced and priced bid shall be opened together in single stage.

E EVALUATION AND COMPARISON OF BIDS

26.0 CONFIDENTIALITY AND COMMUNICATION PROTOCOL

26.1 A bidder may seek clarification regarding the bidding document provisions, bidding process and / or rejection of his bid. EIL shall respond to such requests within a reasonable time. However, such information relating to the evaluation of bids and recommendation of

contract award shall not be disclosed to any other persons not officially concerned with the bidding process.

26.2 Any attempt by a bidder to influence EIL in the evaluation of the bids or Contract award decisions shall render their Bid liable for rejection.

26.3 Notwithstanding Clause 26.2 of ITB, from the time of bid opening to the time of Contract award, if a bidder wishes to contact EIL on any matter related to the bidding process, it shall done so in writing only.

26.4 Bidder shall strictly follow the communication protocol as prescribed in BDS/RFQ. In case the queries are not addressed to the persons specified in the communication protocol stipulated in the BDS/RFQ, EIL may not give any cognizance to the same and EIL shall not be liable to reply them.

26.5 Only a bidder who has participated in the concerned procurement process i.e. prequalification or bidding, as the case may be, can make such representation in respect of the procurement process in which they have participated.

In case pre-qualification bid has been evaluated before the bidding of Technical/ financial bids, an application for review in relation to the technical/ financial bid may be filled only by a bidder who has qualified in pre-qualification bid.
In case Priced bids are opened subsequent to qualification/ acceptance of bidders post evaluation of unpriced bids, an application for review in relation to the price bid may be filed only by a bidder whose unpriced bid is found to be acceptable.
Any representation pertaining to Award stage by a bidder whose price bid is opened and is directly affected by such award shall have to submit such representation within 10 days of the issue of LOA.

26.6 Following decisions of the EIL/PLL shall not be subject to review

i) Determination of the need for procurement;
ii) Selection of the mode of procurement or bidding system;
iii) Choice of selection procedure;
iv) Provisions limiting participation of bidders in the procurement process;
v) The decision to enter into negotiations with the L1 bidder;
vi) Cancellation of the procurement process except where it is intended to subsequently re-tender the same requirements
vii) Issues related to ambiguity in contract terms after award of contract.
viii) Complaints against specifications except under the premise that they are either vague or too specific so as to limit competition may be permissible.

27.0 DEVIATIONS, RESERVATIONS, AND OMISSIONS

27.1 During the evaluation of bids, the following definitions apply:

(a) “Deviation” is a departure from the requirements specified in the Bidding Documents;

(b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and

(c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents.

28.0 DETERMINATION OF RESPONSIVENESS

28.1 EIL/Owner's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in Clause 12.0 of ITB.

28.2 Bids/ offers/ tenders that do not meet the basic requirements specified in the Bidding Document shall be treated as unresponsive and ignored. All tenders received will first be scrutinised to see whether the tenders meet the basic requirements as per the Bidding Document and to identify unresponsive tenders, if any. Unresponsive offers may not subsequently be made responsive by correction or withdrawal of the non-conforming stipulation. Points on the basis of which a tender may be declared as unresponsive and be ignored during the initial scrutiny are:

i. Bidder is debarred or on holiday or suspension as per the terms specified in the Bidding Document.
ii. In case contract/ Purchase order awarded for the tendered work have to be terminated due to Contractor's/ supplier's default and a separate enquiry / tender have to be floated to get the remaining/ complete work executed, such defaulting Contractor/ supplier will not be considered for enquiries/ tenders issued for the refloated work/ enquiry.
iii. The required EMD and Bid document fee (as applicable) has not been provided or exemption from EMD is claimed without acceptable proof of exemption;
iv. In case bidder declares in the bid that they are under liquidation, court receivership or similar proceedings.
v. Offer received from bidders to whom enquiry has not been issued in case of limited enquiry shall not be considered.
vi. Bidder declares of labour strike or lock-out during the course of evaluation or if it comes to notice of EIL.

After examination of preliminary responsiveness as above, the bids determined as responsive shall be considered for further evaluation and shall be evaluated in detail to examine for any shortfall of information/documents and necessary clarifications may be sought at the sole decision of EIL/PLL.

28.3 In addition to above, in case tender is issued on other than 'Zero Deviation' basis, following provision shall also apply:

A substantially responsive bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

(a) if accepted, would:

(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

(ii) limit in any substantial way, inconsistent with the Bidding Documents, EIL's rights or the bidder's obligations under the proposed Contract; or

(b) if rectified,

(i) would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

28.4 Bidder shall not be allowed to submit any Price Implication or Revised Price after submission of e-Bid. In case Exceptions and Deviations submitted by Bidder along with Bid are not considered acceptable and no Amendment is issued incorporating such changes, then in such a case the Bidders would be required to withdraw such Exceptions/Deviations unconditionally in favour of stipulations of the RFQ document without any price implication, failing which such Bid(s) shall be considered as non-responsive and liable for rejection.

29.0 CLARIFICATION OF BIDS

29.1 Bidders should ensure that the Bid submitted is substantially responsive Bid in the first instance itself. Evaluation may be completed based on the content of the Bid itself without seeking any subsequent additional information which may result in rejection of Bid. However, EIL may, at its discretion, may request bidder to submit the necessary information or documentation, within a reasonable period of time, to withdraw material deviation, reservation, or rectify omission in the bid related to documentation requirements. Requesting information or documentation on such account shall not be related to any aspect of the price of the Bid(forming part of evaluation). EIL's request for clarification and the response shall be in writing.

29.2 No change, including any voluntary increase or decrease, in the prices or substance of the bid shall be sought, offered, or permitted. Bidder shall not be allowed to submit any price implication or revised price after submission of Bid unless the same is called for by EIL in writing.

29.3 Any clarification submitted by a bidder that is not in response to a request by EIL shall not be considered. Failure of the bidder to comply with the request may result in the rejection of its Bid.

29.4 If a bidder does not provide clarifications of its bid by the date and time set in EIL's request for clarification, its bid shall be evaluated with available information which may result in rejection of their bid.

30.0 EVALUATION OF TECHNO-COMMERCIAL BIDS

30.1 Prior to price opening of bids, EIL will determine whether each bid is

(i) accompanied with required Bid Security as applicable;

(ii) Fulfils the technical, financial, experience and other requirements as specified in the Bidding Document;

(iii) Bid's responsiveness, in accordance with Clause 27.0 of ITB;

(iv) Authentication of qualification documents (for open competitive bids only);

(v) Any other relevant factor, if any that EIL deems necessary or prudent to be taken into consideration.

30.2 For assessment of submission(s) made by bidder towards their qualification /acceptance, PLL/EIL reserves the right to use in-house information and their performance on jobs completed/ in progress for evaluation purpose.

30.3 Any unsolicited reduction in price offered by a bidder within the bid validity by way of discount or revised prices, subsequent to the bid due date, shall not be taken into account

for comparison. However, such reduction in price shall be taken into account for ordering if such bidder happens to be recommended as per the originally quoted prices.

30.4 In view of the enquiries being issued on zero deviation basis, Technical or commercial queries shall not be raised. However, EIL reserves the right to raise queries in exception situations. CQ/ TQs, if any, shall be issued through E-tendering portal and Bidder shall submit their replies through E-tendering portal only. Accordingly, CQ/ TQ replies through any other mode (e-mail, physical form) shall not be accepted. Offers shall be evaluated based on the information available upto cut-off date for CQ/ TQ replies. Bidder shall not submit any Price against TQ/ CQ raised unless specifically sought in writing.

30.5 In view of zero deviation bidding, in case of MRs (group/ basket/ block/ itemwise) / Lumpsum Enquiry, during unpriced evaluation if a bidder has not quoted any part/component/ freight etc, the bid of such a bidder for the corresponding group/ basket/ block/ item (or the entire MR/ lumpsum Enquiry, in case there is only one group/ block) shall stand rejected. However, EIL reserve the right to ask the bidder to absorb the same (except in case of an item not being quoted in an item wise MR). Non-compliance shall result in rejection of corresponding item/group/block.

It is clarified here that for grouped/ basket/ block, if any item not quoted, the offer shall be rejected for that group/ basket/ block without any CQ/ TQ.

In case, the above is discovered post priced bid opening, such bidder's bid shall not be considered for evaluation for the corresponding group/ block or entire MR/ tender, if there is only one single group/ block. In such an event, the lowest bidder shall be determined out of the remaining bidders.

31.0 OPENING OF PRICE BID

31.1 Priced Bid (Part-II) of only those bidders whose bids is determined to be technically and commercially acceptable by EIL/Owner shall be opened. Bidders selected for opening of their priced bids shall be informed about the date, time and place of price bid opening and shall not be called for physical participation during bid opening.

31.2 In case of enquiries having more than one group/block/basket, the Price Bids of Qualified bidders whose bids are determined to be technically and commercially acceptable for the respective group/block/basket shall only be considered for Price Opening / Evaluation.

32.0 CORRECTION OF ARITHMETICAL ERRORS

The prices quoted by bidders shall be checked for arithmetic correction, if any, based on rate and amount filled by the bidder in the SOR/price schedule/BoQ formats. Based on the format of price schedule/SOR, suitable provisions shall be incorporated in enquiry document as follows:

32.1 RATE AND AMOUNT IN FIGURES AND WORDS

a) When there is a discrepancy between the rate in figures and in words for an item, the rate which corresponds to the amount shall be taken as correct.

b) When the rate quoted by the bidder in figures and words tallies but the amount is incorrect, the rate quoted by the tenderer shall be taken as correct.

c) When it is not possible to ascertain the correct rate as detailed above, the rate quoted for the item in words shall be adopted as the quoted rate. If there is an error in total corresponding to the sub-totals, the totals shall prevail and sub-totals shall be corrected;

32.2 RATE AND AMOUNT IN FIGURES ONLY

When rate and amount are in figures only, in case of discrepancy, the rate quoted by bidder shall be taken as correct.

32.3 LUMPSUM AMOUNT ONLY IN FIGURES AND WORDS

When a lumpsum amount is quoted in figure and words but no unit rates are not required to be quoted, amount quoted in words shall be taken as correct.

In case of any discrepancy, Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with Clause 32.1 of ITB, shall result in the rejection of the Bid and Bid Security shall be forfeited. the same shall be treated as withdrawal of bid and dealt as per the Prevailing Policy and provision of tender document

33.0 CONVERSION TO SINGLE CURRENCY

33.1 In global enquiries, for evaluation and comparison purposes, the foreign currency of the Bid shall be converted into a single currency (i.e. INR), and that will be:

Equivalent Rupees at the Bill selling exchange rate published by the State Bank of India, New Delhi (SBI Card rate for above 10 Lakhs) on one day prior to date of price bid opening shall be considered. In case exchange rate as on one day prior to date of priced bid opening is not available, the latest exchange rate available prior to one day before to date of priced bid opening shall be considered.

34.0 EVALUATION AND COMPARISON OF PRICE BIDS

34.1 EIL shall compare the price bids based on the award methodology and loading criteria, if any, provided in **IFB/LIB/BDS** to determine the lowest evaluated bid.

34.2 When price implication is not specifically sought in writing from the bidder and the bidder on his own in response to CQ/TQ or any other reason submits the price implication, the same shall be treated as unsolicited price implication.

34.3 Any unsolicited reduction in price offered by a bidder within the bid validity by way of discount or revised prices, subsequent to the bid due date, shall not be taken into account for comparison. However, such reduction in price shall be taken into account for ordering if such bidder happens to be recommended as per the originally quoted prices.

34.4 In the event of any unsolicited price increase sought by any bidder, subsequent to the bid due date, the bid of such a bidder shall be rejected, in case the bidder does not agree to withdraw the price increase. In case, price increase is sought by the L1 bidder after priced bid opening and the bidder does not agree to withdraw the price increase, the order shall not be placed with price increase and the enquiry shall be refloated. Wherever, decision is taken to reject a bid, EMD, if submitted, by the Bidder, shall also be forfeited and appropriate action shall be taken as per applicable policy / procedure of EIL.

34.5 Any implication on account of wrong quotation of taxes and duties shall be to Bidder's account. However, the payment towards such taxes and duties quoted by the bidder shall be restricted to lower of taxes and duties quoted by the bidder or the documentary evidence provided by the bidder.

35.0 OWNER/EIL'S RIGHT TO ACCEPT ANY BID, AND TO REJECT ANY OR ALL BIDS

35.1 The PLL/EIL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of the order without thereby incurring any liability to the affected bidder or bidders or any obligations to inform the affected bidder or bidders on the ground of such action by EIL.

36.0 DELETED

F AWARD OF CONTRACT

37.0 AWARD CRITERIA

37.1 Subject to Clause 34.1of ITB, the EIL / Owner shall award the Contract to the bidder who has been determined to be the lowest evaluated bid. However, if in the opinion of Owner, the total price or certain item rates quoted by the lowest evaluated bidder are considered high, Owner may invite such bidder for price negotiation. Lowest quoted bidder shall attend such negotiation meetings and if requested by Owner shall provide the analysis of rates/break-up of amount quoted by him for any or all items of Schedule of Rates/ Prices to demonstrate the reasonability. As a result of negotiation, bidder may offer rebate on his earlier quoted Price.

37.2 In an extreme situation, when there is a 'TIE' based on the evaluated price (after loadings, if any), recourse shall be taken on the basis of Bidder's maximum annual turnover during the last 3 years. For this purpose, annual turnover of the bidders having tie, shall be tabulated for the past 3 years and maximum annual turnover in any of the last 3 years shall be determined for each bidder. The Bidder whose maximum turnover is highest shall be the recommended Bidder.

38.0 REVERSE AUCTION

38.1 Owner/EIL reserve the right to conduct reverse auction among the technically and commercially acceptable bidders. The decision, if any, to conduct reverse auction, will be conveyed to short listed bidders prior to opening of price bid. In case of more than three techno commercially qualified Bidders against the subject tender, the bidder with highest bid received in Price Bid (BoQ) against the Tender shall not be eligible to participate in the Reverse Auction process and his bid will be rejected. Two Stage process shall be followed for Reverse Auction wherein after the Price Bid opening, the Reverse Auction shall be separately scheduled on portal.

The terms & conditions applicable for reverse auctioning shall be as per Annexure-IV to this ITB. However, the % reduction of evaluated price in the Reverse Auction w.r.t. the evaluated price based on price quoted by the bidder in e-bid shall be considered as a uniform discount applicable on all the items of SOR.

39.0 DELETED

40.0 SITUATIONS IN WHICH THE AWARD CAN BE RESORTED TO L2 BIDDER

i) Under insolvency or Bankruptcy Bidders shall submit declaration on proceedings under Insolvency and Bankruptcy Code, 2016. Offer will not be considered of bidder(s) in the following cases:

(a) If the bidder is undergoing insolvency resolution process or liquidation or bankruptcy proceedings under Insolvency and Bankruptcy Code, 2016 (Code) or any other applicable law (in cases where code is not applicable).

(b) Insolvency resolution process or liquidation or bankruptcy proceeding is initiated under the Code or any other applicable law (in cases where code is not applicable) against/ by the bidder at any stage of evaluation of the bid.

In case where the bid of the L-1 bidder is rejected on the aforesaid grounds during the period between Price-Bid-Opening and Award of Contract, the bid of the next higher eligible bidder may be considered for further processing subject to matching of L1 bidder's prices.

ii) Treatment of Holiday listed L-1 Bidder: If after opening of price bids, it has come to the notice that the L-1 bidder has already been put on holiday list due to any reason whatsoever at any location within PLL/EIL, the party will not be considered for issue of order, the bid of the next higher eligible bidder may be considered for further processing subject to matching of L1 bidder's prices.

41.0 NOTIFICATION OF AWARD

41.1 Prior to the exp*i*ration of the period of bid validity, the Owner shall notify the successful bidder, in writing, that its bid has been accepted. The notification letter (hereinafter called the "**Letter of Award (LOA) / PURCHASE ORDER (PO)**"shall specify the sum that the Owner will pay the Supplier in consideration of the execution and completion of the Supply/Works.

41.2 Copies of LOA / PO shall be submitted back by Supplier duly signed and stamped as a token of their acknowledgement.

42.0 CONTRACT PERFORMANCE BANK GUARANTEE

42.1 Within thirty (30) days of the receipt of notification of award, the successful bidder shall comply with the requirement of Contract Performance Bank Guarantee.

42.2 Failure of the successful bidder to submit the above-mentioned Contract Performance Bank Guarantee or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.

43.0 Deleted

44.0 PROCUREMENT FROM A BIDDER FROM A COUNTRY SHARING LAND BORDER WITH INDIA

Department of expenditure vide OM no. 7/10/2021-PPD (1) DATED 23.02.2023 has issued the Revised Guidelines for Restriction on Procurement from Bidders from Countries sharing Border with India.

In view of the above order, following guidelines are issued for compliance:

a) Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services & non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority specified in Annexure-I of the DoE OM dated 23.07.2020 {Public Procurement No.1}.

b) These orders will not be applicable to the bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects.

c) Updated lists of countries to which lines of credit have been extended or List of countries in which development grant projects are undertaken are given on the website of Ministry of External Affairs.

d) Bidder shall refer to the enclosed **Annexure-II of ITB.**

Bidders shall submit a certificate of compliance in the enclosed Form I A / II of Annexure-II of ITB.

45.0 NON-APPLICABILITY OF ARBITRATION CLAUSE IN CASE OF BANNING OF VENDORS/SUPPLIERS/CONTRACTORS/BIDDERS/CONSULTANTS INDULGED IN FRADULENT/COERCIVE PRACTICES

Arbitration clause will not be applicable in case of banning of Vendors/suppliers/contractors/bidders/consultants indulged in fraudulent/ coercive practices. Accordingly, the following provision shall be applicable:

“Notwithstanding anything contained contrary in GCC and other sections of Bidding Document, in case it is found that the Vendors/ Suppliers/ Contractors/ Bidders/ Consultants indulged in fraudulent/ coercive practices at the time of bidding, during execution of the contract etc., and/or on other grounds as mentioned in PLL’s “Procedure”, the contractor/bidder/vendor/supplier /consultant shall be banned (in terms of aforesaid procedure) from the date of issuance of such order by PLL., to such Vendors/ Suppliers/ Contractors/ Bidders/ Consultants and PLL has the right to take appropriate legal remedy available to it under the applicable laws. Such disputes shall be governed by the jurisdiction clause of the contract.

46.0 PROCEDURE FOR ACTION IN CASE CORRUPT/ FRAUDULENT/COLLUSIVE/ COERCIVE PRACTICES

Procedure for action in case Corrupt/ Fraudulent/Collusive/Coercive Practices is enclosed with General Conditions of Contract. Further, EIL may also initiate suitable actions against above and procedure for the same is available in EIL website.

47.0 COMPLIANCE OF PLL INSIDER'S TRADING:

By virtue of association / engagement with Petronet LNG Limited (PLL), it is likely that certain Unpublished Price Sensitive Information (UPSI) as defined under "Code for Prevention of Insider Trading in the Securities of PLL" (hereinafter called Code), copy of which is hosted on the website of the company www.petronetlng.in, that is not generally available and which upon becoming generally available is likely to materially affect the price of the securities issued by PLL, might be shared with you / your organization. It is hereby cautioned that you or any of your team members or immediate relatives thereof or your organization, should not trade in the securities of PLL while in possession of such UPSI or communicate such UPSI to any person except in furtherance of legitimate purposes (as defined in the Code), performance of duty or discharge of legal obligations. Any trades in securities of PLL, directly or indirectly, while in possession of any UPSI would be presumed to have been motivated by the knowledge and awareness of the UPSI and the onus to prove that trades were executed otherwise would be on you or any of your team members or your organization as the case may be. It is therefore advised that all concerned as stated above must familiarize himself/themselves with the "Code for Prevention of Insider Trading in the Securities of PLL", copy of which is hosted on the website of the company.

Accordingly, it must be ensured that any UPSI, whenever received from the company:

(a) shall be used solely for the purpose for which it is being disclosed;
(b) shall be preserved and the secrecy of such information shall be maintained;
(c) shall not be disclosed to any third party;
(d) shall be kept securely and properly protected against theft, damage, loss and unauthorized access (including access by electronic means) by deploying means similar to those being used to secure its own confidential information;
(e) to notify PLL immediately upon becoming aware that any of the confidential information has been disclosed to or obtained by a third party.

It may be noted that any violation in dealing with UPSI shall be considered as breach of terms of engagement / Contract and PLL shall take necessary action for such breach in addition to reporting to SEBI for taking necessary action under SEBI (Prohibition of Insider Trading) Regulations, 2015 or subsequent amendments thereof. Further, SEBI may take any action including levy of penalty etc. as per SEBI Regulations in this regard in case of any violation in dealing with UPSI at your end.

48.0 UNIQUE DOCUMENT IDENTIFICATION NUMBER

The Institute of Chartered Accountant of India at its 379th council meeting dated 17-18th December, 2018 made generation of Unique Document Identification Number (UDIN) mandatory for every signature of full time practicing chartered accountant in phased manner for following services:

a) All certificates with effect from 1st February, 2019.

b) GST and Income Tax Audit with effect from 1st April, 2019.

c) All Audit and Assurance Functions with effect from 1st July, 2019.

In view of the above, bidder shall ensure that any certificate/ reports issued/ attested by an practicing chartered accountant in India and submitted in the bid shall mandatorily include the UDIN number. Certificate / reports issued/ attested without UDIN number of practicing chartered accountant in India shall not be considered for evaluation. The requirement of including UDIN shall not be applicable for certificate/ reports issued/ attested by a chartered accountant practising in Foreign Country.

49.0 TRADE RECEIVABLE DISCOUNTING SYSTEM (TReDS)

Government of India (GoI) introduced a scheme for setting up and operating the institutional mechanism for facilitating the financing of trade receivables of MSMEs from corporate buyers through multiple financiers known as Trade Receivables Discounting System (TReDS). This enables MSMEs to maintain the level of their Working Capital and process more and more corporate orders with minimum lead time.

Annexure – I to ITB

E-TENDERING METHODOLOGY

Instructions for Online Bid Submission:

The bidders are required to submit soft copies of their bids electronically on the CPP Portal (URL: http://eprocure.gov.in) only, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More detailed information useful for submitting online bids on the CPP Portal may be obtained at:

http://eprocure.gov.in/eprocure/app .

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app) by clicking on the link "Click **here to Enroll**" on the CPP Portal is free of charge.

2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process and submit in EIL tender portal for updation of records (http://tenders.eil.co.in) . These details would be used for any communication from the CPP Portal.

4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (DSC) (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

5) Foreign Bidders have to refer "DSC details for foreign Bidders" for Digital signature Certificates requirements which comes under Download Tab at http://eprocure.gov.in/eprocure/app and the remaining part is same as above and below.

6) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

7) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

2) Once the bidders have selected the tenders they are interested in, the same can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

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3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3) To avoid Network congestion, Bidder is recommended to upload file size of up to Maximum 35 MB per part. However, in case file size exceeds 35 MB, bidder may compress the files by scanning with 75 dpi setting as per s.no 4 below and can use additional 25 MB space ("My Documents") provided to the bidder as per s.no 5 below.

4) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document and generally, they can be in PDF / XLS / RAR / DWF formats. **Bid documents may be scanned with 75 dpi with black and white option. However, Price Schedule / SOR shall be strictly in RAR format without altering any contents of the formats uploaded by EIL in their Bidding Document.**

5) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Documents" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.

4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the Tender Processing Section, as per instructions specified in ITB. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.

5) A Price Bid format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the Price Bid file, open it and complete the cells with their respective financial quotes and other

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details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the Price Bid file is found to be modified by the bidder, the bid will be rejected.

6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.

8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

9) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

RETENDER

Please note that if Tender has been retendered, than it is mandatory for the bidder to submit their offer again on CPP Portal.

WITHDRAWAL OF BID

It may please be noted that bidders now have an additional feature of withdrawing their bids before due date and time. After submitting the bid on the CPP Portal, if the bidder wishes to withdraw his bid, he can do so. However, if the bidder withdraws his bid, he will be exempted from further participation in the tender and won't be able to submit his bid again for that particular tender.

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24 x 7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800-3070-2232 and Mobile Nos +91-7878007972, +91-7878007973.

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Restriction on Procurement from Bidders from Country(ies) sharing land border with India

1.0 Department of Expenditure (DoE) vide **O.M. No. 7/10/2021-PPD(1) dated 23.02.2023** has issued the revised guidelines for Restrictions on Procurement from Bidders from Country(ies) sharing Border with India. These guidelines are available on the website of DoE (https://doe.gov.in).

2.0 **Requirement of registration from Competent Authority:**

i). Any Bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the Bidder is registered with the Competent Authority, specified in **Annexure-I of DoE O.M. No. 7/10/2021-PPD(1) dated 23.02.2023.**.

ii). Any Bidder (including an Indian bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the Bidder is registered with the Competent Authority, specified in **Annexure-I of DoE O.M. No. 7/10/2021-PPD(1) dated 23.02.2023.**

3.0 **This Order shall not apply to the following special cases:**

i). In projects which receive international funding with the approval of the Department of Economic Affairs (DEA), Ministry of Finance, the procurement guidelines applicable to the project shall normally be followed, notwithstanding anything contained in this order and without reference to the Competent Authority. Exceptions to this shall be decided in consultation with DEA.

ii). This order shall not apply to procurement by Indian missions and by offices of Government agencies/ undertakings located outside India.

iii). This order will not apply to Bidders (or Entities) from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Updated lists of countries to which lines of credit have been extended or in which development projects are undertaken are given on the website of the Ministry of External Affairs.

iv). Procurement of spare parts and other essential service support like Annual Maintenance Contract (AMC)/ Comprehensive Maintenance Contract (CMC), including consumables for closed systems, from Original Equipment Manufacturers (OEMs) or their authorized agents, shall be exempted from the requirement of registration.

4.0 **Definitions**:

i). **"Bidder"** (including the term 'Tenderer', 'Consultant' 'Vendor' or 'Service Provider' in certain contexts) means any person or firm or company,

including any member of a Consortium or Joint Venture (that is an association of several Persons, or Firms or Companies), every artificial juridical person not falling in any of the descriptions of Bidders stated hereinbefore, including any Agency, Branch or Office controlled by such person, participating in a procurement process.

ii). **"Tender"** will include other forms of procurement, except where the context requires otherwise.

iii). **"Transfer of Technology"** means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently. (Matters of interpretation of this term shall be referred to the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade, and the interpretation of the Committee shall be final.)

iv). **"Specified Transfer of Technology"** means a transfer of technology in the sectors and/ or technologies, specified in **paragraph 5.0**, occurring on or after 23.07.2020.

v). **"Bidder (or entity) from a country which shares a land border with India"** means

(a) An entity incorporated, established or registered in such a country; or

(b) A subsidiary of an entity incorporated, established or registered in such a country; or

(c) An entity substantially controlled through entities incorporated, established or registered in such a country; or

(d) An entity whose beneficial owner is situated in such a country; or

(e) An Indian (or other) agent of such an entity; or

(f) A natural person who is a citizen of such a country; or

(g) A Consortium or Joint Venture where any member of the Consortium or Joint Venture falls under any of the above.

vi). **Beneficial Owner** for the purposes of **paragraph 4.0 v) (d)** will be as under:

a) **In case of a Company or Limited Liability Partnership**, the beneficial Owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation: -

1. "Controlling ownership interest" means ownership of, or entitlement to, more than twenty-five per cent of shares or capital or profits of the company;

2. "Control" shall include the right to appoint the majority of the Directors or to control the management or policy decisions,

including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

b) **In case of a Partnership Firm**, the beneficial Owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

c) **In case of an Unincorporated Association or body of Individuals**, the beneficial Owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

d) Where no natural person is identified under a) or b) or c) above, the beneficial Owner is the relevant natural person who holds the position of senior managing official;

e) **In case of a Trust**, the identification of beneficial Owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

vii). **"Agent'** is a person employed to do any act for another, or to represent another in dealings with third persons.

[Note:

i). A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent for the purpose of this Order.

ii). However, a Bidder who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]

5.0 **Sensitive Sectors/ Technologies (relevant only for the provisions on ToT arrangements):**

i). Certain sectors and technologies have been identified as sensitive from the national security point of view. **The sectors listed in Schedule I (copy attached) are considered Category-I sensitive sectors**. **The sectors listed in Schedule II (copy attached) are considered Category-II sensitive sectors**. The technologies listed in **Schedule III** (copy attached) are considered sensitive technologies.

ii). For **Category-I sensitive sectors**, Bidders with ToT arrangement in any technology with an entity from a country which shares a land border with India shall require registration.

iii). For **Category-II sensitive sectors**, Bidders with ToT arrangement in the sensitive technologies listed in **Schedule III**, with an entity from a country which shares a land border with India shall require registration.

iv). In **Category-II sensitive sectors**, the Secretary (or an officer not below the rank of Joint Secretary to Government of India, so authorized by the Secretary) of the Ministry/ Department of the Government of India is empowered, after due consideration, to waive the requirement of registration for a particular item/ application or a class of items/ applications from the requirement of registration, even if included in Schedule-Ill. The Ministry/ Department concerned shall intimate the Department for Promotion of Industry and Internal Trade (DPllT) and National Security Council Secretariat (NSCS) of their decision to waive the requirement of registration.

Ministries/ Departments of the Government of India are not required to consult the DPllT/ NSCS before deciding and are only required to intimate the decision to DPllT/ NSCS. If any point is raised by DPllT/ NSCS, it should be considered in future procurements; ongoing procurement for which the waiver was granted need not be interrupted or altered.

Based on security considerations, a Ministry/ Department in a **Category-II sensitive sector** or other Ministries/ Departments may recommend to DPllT inclusion of any other technology in the list of sensitive technologies, either generally or for their Ministry/ Department.

6.0 Sub-contracting in works contracts

In works contracts, including turnkey contracts, Contractors shall not be allowed to sub-contract works to any Contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. The definition of **"Contractor from a country which shares a land border with India"** shall be as given in above **paragraph 4.0 v)**.

[Note: Procurement of raw material, components, etc. does not constitute sub- contracting.]

7.0 Certificate regarding compliance

Bidder shall submit a certificate of Compliance in the enclosed **Form-I A/ Form-I B/ Form - II** (as applicable).

This certificate shall be on the Bidder's Letter head and shall be duly signed & stamped by the authorised signatory of the Bidder.

In case at any stage, if it found the certification given by the Bidder is false, their Bid shall be rejected and shall be liable for other penal actions like placement on Suspension/ banning or forfeiture of EMD (if applicable). However, if this is found after order placement, this would be ground for immediate termination and further legal actions in accordance with law/ provisions of Bidding Document including suspension/ banning and forfeiture of CPBG/ Security Deposit.

Form- I A

BIDDER'S UNDERTAKING

(On Company's Letter Head)

To,

M/s Engineers India Limited/ _____ (Name of the client)

Tender Name : _____

Tender No. : _____

"I have read the clause regarding restrictions on procurement from a Bidder of a country which shares a land border with India; I hereby certify that, Bidder M/s_____ (Name of the Bidder) is:

i).	Not from such a country	[ ]
ii).	If from such a country, has been registered with the Competent Authority	[ ]

Notes:

a) Bidder to tick appropriate option (√) in either i) or ii) above)

b) In case of sl. no. ii) above, Bidder to attach evidence of valid registration by the Competent Authority.

I hereby certify that the Bidder fulfills all requirements in this regard and eligible to be considered.

Place :
Date :

Signature (#):
Name :
Designation :
Seal :

(#) Undertaking shall be signed by the authorized signatory of the Bidder.

Form- I B

BIDDER'S UNDERTAKING IN CASE OF SUB-CONTRACTING IN WORK CONTRACTS

(On Company's Letter Head)

To,

M/s Engineers India Limited/ _____ (Name of the client)

Tender Name : _____

Tender No. : _____

"I have read the clause regarding restrictions on procurement from a Bidder of a country which shares a land border with India and on sub-Contracting to Contractors from such countries; I hereby certify that, Bidder M/s_____ (Name of the Bidder) is:

i).	Not from such a country	[ ]
ii).	If from such a country, has been registered with the Competent Authority and will not sub-Contract work to a Contractor from such countries unless such Contractor is registered with the Competent authority	[ ]

Notes:

a) Bidder to tick appropriate option (√) in either i) or ii) above)

b) In case of sl. no. ii) above, Bidder to attach evidence of valid registration by the Competent Authority.

I hereby certify that the Bidder fulfills all requirements in this regard and eligible to be considered.

Place :
Date :

Signature (#):
Name :
Designation :
Seal :

(#) Undertaking shall be signed by the authorized signatory of the Bidder.

Form-II

BIDDER'S UNDERTAKING IN CASE OF TRANSFER OF TECHNOLOGY (ToT) ARRANGEMENT

(On Company's Letter Head)

To,

M/s Engineers India Limited/ _____ (Name of the client)

Tender Name : _____

Tender No. : _____

"I have read the clause regarding restrictions on procurement from a Bidder having Transfer of Technology (ToT) arrangement. Bidder M/s_____ (Name of the Bidder), hereby certify that,

i).	Bidder does not have any ToT arrangement requiring registration with the competent authority	[ ]
ii).	Bidder has valid registration to participate in this procurement	[ ]

Notes:

a) Bidder to tick appropriate option (√) in either i) or ii) above)

b) In case of sl. no. ii) above, Bidder to attach evidence of valid registration by the Competent Authority.

I hereby certify that the Bidder fulfills all requirements in this regard and eligible to be considered.

Place :
Date :

Signature (#):
Name :
Designation :
Seal :

(#) Undertaking shall be signed by the authorized signatory of the Bidder

ENGINEERS INDIA LIMITED

SPECIAL CONDITIONS OF CONTRACT

FOR

PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT PROJECT

FOR

PETRONET LNG LIMITED

GLOSSARY

CPBG	Contract Performance Bank Guarantee
OWNER	Petronet LNG Limited (PLL)
Bidder/ Vendor	Whom RFQ/ Tender has been issued/ who have submitted offer against RFQ
FOA / LOA	Fax of Acceptance / Letter of Acceptance
FOB / FOT	Free on Board / Free on Truck
PBG	Performance Bank Guarantee
PO	Purchase Order
PRS	Price Reduction Schedule for delayed Delivery
RFQ	Request for Quotations
BDS	Bid Data Sheet
TOV	Total Order Value
SOR	Schedule of Rates / Price Schedule
TPIA	Third Party Inspection Agency

1 INTRODUCTION

1.1 These Special Conditions of Contract (SCC) shall be read in conjunction with the General Conditions of Contract (GCC), Material Requisition and any other document forming part of this RFQ wherever the context so requires.

1.2 Where any portion of the GCC is repugnant to or at variance with any provisions of the SCC& Bid Data Sheet then unless a different intention appears, the provision(s) of the SCC & Bid Data Sheet shall be deemed to override the provision(s) of GCC only to the extent that such repugnancy of variations in the SCC & Bid Data Sheet are not possible of being reconciled with the provisions of GCC for Goods.

2 PAYMENTTERMS

2.1 Refer BDS for payment terms.

2.2 NOTES:

i) 1ST Milestone payment shall be released only after receipt of CPBG (wherever applicable) Wherever ABG is required to be submitted by the supplier against milestone progress payment, validity of ABG shall be valid till 30 days beyond contractual delivery period which shall be further extended, as required till last date of receipt of all material at site. However, ABG will be released on dispatch/ receipt of material at site (as applicable).

ii) Prorata payments shall be applicable on dispatch of equipment. In case of equipment, prorate shall not be on part of equipment.

iii) In case of indigenous SUPPLIERs, wherever taxes/duties are separately indicated, the order value shall be exclusive of taxes/duties. 100% payment of GST shall be paid on receipt of GST invoices and on proof of payment of GST or on auto-population under GST portal.

iv) Payment to indigenous SUPPLIERs shall be released through Electronic Clearing System (ECS) and to foreign SUPPLIERs, payments other than against shipping documents, i.e., for Site Work and Supervision/Training etc. shall be through wire transfer.

v) **Bidder shall submit Original Invoice to PLL site office in a triplicate.**

vi) Irrevocable Letter of Credit (L/C) shall be acceptable from foreign Suppliers in place of Advance Bank Guarantee as well as Contract cum Performance Bank Guarantee.

vii) For payment to Foreign suppliers: L/C shall be established in favor of the supplier in a bank in his country, for an appropriate amount (in line with Payment Terms). L/C shall be opened within 45 days of receipt of acknowledgement of FOA/PO and receipt of CPBG (wherever applicable). In case confirmed L/C is insisted by supplier, L/C confirmation charges shall be to supplier's account.

viii) All payments (other than through L/C) shall be released within 15 days of receipt of invoice and all requisite documents, complete in all respects.

ix) All bank charges of respective bankers shall be to respective account.

x) Supplier shall submit Billing Schedule within three weeks after placement of FOA/PO (whichever is issued earlier) for EIL/OWNER's approval (wherever applicable). Suppliers requiring multiple dispatches will restrict the number of dispatches to maximum Three, unless agreed otherwise by Project Manager.

xi) In case site front is not available up to 6 (Six) months (wherever site work is applicable), after receipt of all supplies at site, the payment against the site work shall

be released on submission of additional Bank Guarantee of equivalent amount valid for 1 (One) year or such extended period as may be required.

xii) Certification for placement of sub-order and/or identification of major raw material, in the above payment terms, shall be carried out by the EIL Inspection /Third Party Inspection agency.

xiii) Wherever the payment provision is there against ABG, and Vendor is not seeking payment against these milestone, those milestone payment shall be released along with milestone of despatch/ receipt of material at site without seeking any ABG for earlier milestone payment.

xiv) In case of high value Contracts for sophisticated Equipment/ Machinery, if domestic supplier insists payment through LC, this may be considered provided Loading provision is included in Bidding Document.

3 TRANSPORTATION

Clause no. 19 of GCC stands modified to the following extent:

3.1 INDIGENOUS SUPPLIERS

Indigenous SUPPLIERs are required to dispatch the goods on door delivery basis through any registered Transporters on FOT/FOR dispatch point basis or FOT Site basis, as mentioned in RFQ/BDS.

Transportation charges for the items shall be quoted separately as per requirement / scope of MR.

The consignment should be handed over to transporter with E-way bill, wherever required as per law/act. In case such e-way bill is required to be issued by Owner, the concerned designated order issuing authority may be contacted in this regard.

It shall be responsibility of the seller to send intimation immediately on dispatch of the material so that necessary arrangements can be made at site. Delays on account of the same shall solely be attributable to the Supplier.

3.2 FOREIGN SUPPLIERS

Orders in case of foreign suppliers shall be on FOB/CFR Indian seaport of entry basis (JNPT (Nhava Sheva Port) for Containers/ODC & Kandla Port for Break Bulk),wherein the ocean transportation from FOB Port of Exit to the designated Indian Port shall be arranged by the Supplier. All shipments of break bulk material and containerized cargo/ODC shall be made by suitable vessels certified for sea/air worthiness and complying with National/ International safety regulations and age of the vessel being less than 25 years. Bidder to coordinate with PLL nominated Customs House Agent for smooth discharge /delivery of the cargo at the Port of arrival.

Wherever the consignment is required to be shipped by Air (Mumbai Airport for Air Freight), the commercial terms and conditions including INCOTERMS shall be applicable to the extent modified as per BDS.

Bidder shall quote separate prices on FOB Port of Exit basis for Ocean Freight transportation charges. Quoted Ocean freight charges for Break Bulk cargo delivery shall be on FLT (Full Liner Terms), i.e., all charges at destination port shall be borne by the bidder till the cargo is unloaded on to the wharf /vehicle as the case may be. No Trans-shipment is permitted for Break Bulk Cargo/ODC.

Bidder shall inform 07 days prior to the expected date of arrival of vessel in port of entry in India. Detention & Demurrages, if any, due to early arrival of vessel, shall be to bidder's account.

Wherever, the foreign bidder does not accept the ocean transportation in his scope, offer of such bidder shall be rejected.

4 CURRENCY OF QUOTE

4.1 FOREIGNSUPPLIERS

Foreign SUPPLIERs are required to submit prices in one currency out of USD/EURO/GBP/JPY. In case a foreign SUPPLIER is sourcing part of equipment/ services from India, prices of such equipment/ services shall be quoted in Indian Rupees only and terms & conditions applicable to Indian portion shall be as per Annexure-I to this SCC and to be read in conjunction with terms & conditions applicable to Indigenous Suppliers.

Change in currency once quoted will not be allowed.

4.2 INDIGENOUS SUPPLIERS

Indigenous SUPPLIERs are required to submit price in Indian Rupees only.

5 SINGLE POINT RESPONSIBILITY OF THESUPPLIER

In case of MRs containing supplies as well site work/ services, a single order, covering the supply part as well as site work/ services, shall be placed. Split ordering will not be permitted.

In case, a foreign SUPPLIER requests for a separate order on his Indian sub-SUPPLIER, the same shall not be accepted. However, payment to Indian sub-SUPPLIER shall be released directly in Indian Rupees against invoices duly certified by the Foreign SUPPLIER.

For this purpose, the Indian sub-SUPPLIER's name, material/ services and corresponding price in Indian Rupees, shall be clearly spelt out in the purchase order on foreign SUPPLIER. In case a Foreign supplier sources supplies/ services within India, the applicable terms & conditions shall be applicable to the extent as per Annexure-I to this SPC. However, the vendor is not allowed to change the sub supplier during the course of Contract.

6 CONTRACT CUM PERFORMANCE BANK GUARANTEE(CPBG)

6.1 CPBG shall be required for 10% of the Total Order Value (TOV) for all items.

6.2 Total Order Value shall mean supply price (FOT dispatch point price for Indian bidder and FOB/ FCA price for foreign bidders) plus site work (wherever applicable) plus transportation but excluding GST, supervision services, training, HAZOP, 3D-modeling, AMC.

6.3 Indemnity Bond/Corporate Guarantee in lieu of CPBG shall not be considered. For Foreign bidders, Irrevocable stand by Letter of Credit is acceptable in lieu of CPBG.

6.4 CPBG shall not be applicable for orders where the contract value is less than INR 10 Lakhs.

7 TAXES & DUTIES

7.1 Notwithstanding any prejudice to any other provisions of Bidding Document, provisions of Annexure-II of SCC shall be read in conjunction with Clause No. 30 of GCC.

8 FIRM PRICES

8.1 The prices shall be firm and fixed and not subject to any variation, except statutory variation in taxes and duties &imposition of new taxes as per Annexure II.

8.2 In case of Electrical and Instrumentation Cables, variation in prices shall be admissible as per IEEMA Price Variation Clause. *[Refer BDS for applicability of the same].* However, price variation shall be restricted to ceiling of +10 % and no ceiling limit in case of negative variation.

8.3 For 2 years O&M spares, prices shall be kept valid for a period two years from the final bid due date.

9 PRICE REDUCTION SCHEDULE (PRS)

9.1 Price Reduction Schedule shall be as per clause no. 10 of "General Conditions of Contract".

9.2 Wherever the supply period and site work are indicated as two separate periods and notice of site readiness is required for site work, intervening period, if any, shall be excluded, while calculating the price reduction for delay.

9.3 Price reduction shall be affected in the Invoice value before presenting for payment.

9.4 For the purpose of PRS, a delay for a period less than one week shall be considered as delay for the full week.

9.5 Total order value shall mean Supply value plus Site Work value (if applicable) including any amendments/ change order but excluding GST. However, in case of Short Closure/ cancellation, the order Value shall be executed/ supplied value plus the actual cost of work done at the risk & cost of the supplier plus EIL overhead charges.

10 INSPECTION

10.1 Inspection of Indigenous items shall be done by EIL and supplier need not consider these charges while quoting. In the case Indian party sourcing materials from abroad, the bidder shall arrange inspection through Third Party Inspection agency in the country of origin& charges of the same shall be included in quoted prices

10.2 Foreign vendors shall include inspection charges of Third Party Inspection agency in the country of origin. In the case of foreign party sourcing items from India the inspection shall be by EIL, no additional charges shall be payable to seller on account of the same.

10.3 List of approved TPI agencies:

a) M/s TUV SUD South Asia Pvt. Ltd.
b) M/s TUV Rheinland (India) Pvt. Ltd.
c) M/s TUV India Pvt. Ltd. / TUV Nord Group (TUV)
d) M/s Apave Assessments India Pvt. Ltd. (AAIPL)
e) M/s VCS Quality Services Pvt Ltd
f) M/s DNV
g) M/s IR Class Systems and Solutions Pvt Ltd
h) M/s Projects & Development India Ltd (PDIL)
i) M/s Tata Projects Ltd
j) M/s Llyods Register (LRS)
k) M/s Bureau Veritas (BV)
l) M/s SociétéGénérale de Surveillance (SGS)
m) M/s Gulf Lloyds Industrial Services (GLI)
n) M/s International Certification Services (ICS)
o) M/s Bureau Veritas (Ind.) Pvt. Ltd (BVIS)
p) M/s Intertek India Pvt. Ltd.
q) M/s Moody International (Moody)
r) M/s RINA India Pvt. Ltd.
s) M/s Competent Inspectorate and Consultants LLP
t) M/s ABS Industrial Verification (India) Pvt. Ltd.
u) M/s Certification Engineers International Ltd (CEIL)
v) M/s SGS India Pvt. Ltd.

Note: TPI Agencies listed above can depute their foreign counterparts of their respective country, where the inspection needs to be carried out for material/equipment

being supplied by the foreign vendor.

10.4 Seller to note the following:

a) ITP / QAP will be approved by EIL Inspection/Third Party Inspection agency incorporating requirements of ITP, Technical specifications and approved documents as per PR.

b) The Inspection release note issued by the EIL Inspection /Third Party Inspection agency shall clearly stipulate that materials/equipment have been inspected as per Code-1 approved drawings and approved ITP /QAP.

c) Certification of final documents, wherever applicable, for release of final payment, shall be carried out by EIL Inspection /Third Party Inspection agency issuing the final inspection certificate as per PR.

d) Based on indicative inspection and test plan identifying scope of inspection / review of document as minimum requirement, detailed inspection and test plan indicating all specified requirement of Purchase Requisition to be generated by vendor and same duly approved by TPIA to be submitted to EIL/Owner for approval.

e) The price quoted by the bidder shall be inclusive of all IBR/IGC/NACE charges (if applicable) and all statutory certification charges PESO/CCOE etc. (if applicable) as required in the Material Requisition.

11 COMPREHENSIVE MARINE-CUM-ERECTIONINSURANCE

11.1 Clause no. 18 of GCC stands modified to the following extent:

Comprehensive Insurance (Transit/ Marine cum storage, erection, till handing over of equipment) shall be arranged by PLL. Therefore, the same shall not be included in the quoted prices. However, all transit insurance up to FOB / FCA International Sea / Air Port of Exit must be included in the quoted Price.

12 BASIS OF EVALUATION

12.1 WHERE ONLY INDIAN BIDS ARE UNDERCOMPARISON

12.1.1 FOT dispatch point price, Cost of mandatory spares, if identified in the Material Requisition, commissioning spares and special tools & tackles, road freight for price evaluation of bids, but GST, cost of Spares for two years operation& Unit rates of addition/deletion shall be excluded.

12.1.2 AMC charges excluding GST thereon shall be considered for evaluation, wherever AMC is required.

12.1.3 Supervision (man days as indicated in enquiry document), Training, Hazop, 3D-modeling charges, any other charges excluding GST thereon shall be considered for evaluation wherever these services are required.

12.1.4 Site Work charges excluding GST thereon shall be considered for evaluation, wherever applicable.

12.1.5 Technical & Commercial loading, if any, shall be considered for evaluation of bids.

12.2 WHERE ONLY FOREIGN BIDS ARE UNDER COMPARISON

12.2.1 Bids shall be evaluated on the basis of CFR (JNPT (Nhava Sheva Port)) prices including, stowage charges wherever applicable (as quoted by BIDDERs), and considering sea freight as quoted by the bidder.

In case of pipes, if a foreign bidder has not quoted or not included stowage charges, the same shall be loaded @ 10% of bidder's quoted Ocean Freight.

12.2.2 Cost of mandatory spares identified in the Material Requisition, Commissioning Spares and

special tools & tackles will be included for evaluation of bids, but costs of Spares for two years operation & Unit rates of addition/deletion shall be excluded.

12.2.3 AMC charges excluding GST thereon shall be considered for evaluation wherever AMC is required.

12.2.4 Site Work excluding GST thereon, wherever applicable shall be considered for evaluation.

12.2.5 Supervision (man days as indicated in enquiry document) and Training charges excluding GST thereon shall be considered for evaluation, wherever, supervision and training are required.

12.2.6 Technical & Commercial loading, if any, shall be considered for evaluation of bids.

12.2.7 Income tax payable in India, in case foreign bidder quotes net of taxes.

12.2.8 For global enquiries, for evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency i.e., INR, and the declared rate of exchange (Bills selling rate of State Bank of India) one day prior to the due date of opening of priced bids shall be considered, for conversion purpose.

Note: Wherever any one of the foreign bidders has opted for concessional rate of duty (Multi-Lateral or Bi-Lateral trade agreement between India and bidder's country), the evaluation shall be carried out in line with clause 12.3.2 (v).

12.3 WHERE INDIAN AS WELL AS FOREIGN BIDS ARE UNDER COMPARISON

12.3.1 **INDIGENOUS BIDDERS**:

The evaluated price of indigenous BIDDERs shall be carried out on the basis of landed cost at Site, as per clause 12.1 above.

In addition to above a notional loading @ 1% of FOT dispatch point price towards inspection charges by EIL shall be applied.

12.3.2 **FOREIGN BIDDERS:**

The evaluated price of foreign BIDDERs shall be on the basis of landed cost at Site, including the following:

i) Evaluation shall be done as per clause 12.2 above

ii) Marine insurance @ 1% of FOB Price.

iii) Applicable Customs duties considering prevailing applicable Merit rate of Basic Custom duty or Basic Custom duty as per Multi-Lateral or Bi-lateral agreement etc., (if declared by bidder)] on CIF value.

iv) Custom clearance and Port Handling charges@ 2% of CIF value

v) Inland Freight (from Port of Entry (JNPT (Nhava Sheva Port)) to PLL Dahej project site) charges @ 2% of the aggregate cost at S. No. (i) to(iv).

vi) In case inspection is done by EIL, a notional loading @ 1% of FOB price towards inspection charges by EIL

vii) L/C charges @ 0.25% of FOB price.

Landed Cost at Project Site = S.No. (i) to (vii).

NOTE: Transit insurance for Indigenous and Foreign BIDDERs for transportation within India, will not be loaded (being in PLL scope).

12.4 GENERAL

12.4.1 Taxes and duties will be cost loaded as quoted by the bidder. However, if a SUPPLIER

states that taxes/duties are not applicable at present and will be charged as applicable at the time of delivery, then his bid shall be loaded by the maximum rate of taxes/duties applicable at the time of evaluation of Bids.

12.4.2 Notwithstanding anything mentioned elsewhere in the Bidding Document, the aggregate liability of Owner towards Payment of Taxes & Duties shall be limited to the volume of GST declared by the bidder in its bid & nothing shall be payable extra except for the statutory variation in taxes & duties & any other taxes & duties mentioned elsewhere in the bidding document.

12.4.3 In case the bidder is covered under Composition Scheme under GST laws, then bidder should quote the price inclusive of the GST (CGST & SGST/UTGST or IGST). Further, such bidder should mention “Cover under composition system” in column for GST (CGST & SGST/UTGST or IGST) of price schedule/proposal form.

12.4.4 In case of two different charges are indicated for additional services like freight, TPI etc. or charges are quoted in %age as well as lumpsum charges and both works out to be different, higher between the two shall be considered for evaluation. If the bidder happens to be L1 with the higher charges, lower value shall be considered for the award.

13 LOADING/REJECTIONCRITERIA

No loading criteria on account of commercial deviation will be applicable.

Bids shall be invited on Zero Deviation bidding basis. Deviation to terms & conditions to RFQ shall lead to rejection of offer.

14 TRANSFER OF PROPERTY FROM THE SELLER TO THE PURCHASER

The transfer of property shall be deemed to have taken place as follows subject to the provisions herein contained:

a) FOB/FCA/CFR Contracts: In the case of FOB/FCA, CFR & CIF Contracts, when the Goods have been put on board of ship, at the specified port of loading and a clean Bill of Lading / Airway Bill is obtained.

b) F.O.T. despatch point: On handing over the equipment to the carrier against receipt (LR) along with Inspection Release Note (IRN) and such document having been passed over to the Purchaser.

c) F.O.T. Project Site: on receipt of material at Project site.

d) Equipment sent freight/ carriage paid to the Project site: On receipt of goods at site.

e) Equipment erected by the Seller: on acceptance at job site.

f) Equipment commissioned by the Seller: On taking over by the Purchaser for regular operation after test run at maximum capacity for specified period satisfactorily performed.

15 FALL CLAUSE

Clause no. 28 of GCC applicable is case of NOMINATION AND PROPRIETARY AWARD.

16 PART ORDER

16.1 Bidder hereby agrees to accept part order at Purchasers option without any limitation whatsoever.

16.2 Any charges quoted extra as lumpsum shall be applicable prorata on value basis in the event of part order.

17 REPEAT ORDER

17.1 Repeat Order shall be as per clause no. 24 of GCC.

17.2 Non-Acceptance of Repeat Order conditions by bidder shall not be the reason for rejection

of bid.

18 DISPATCH NUMBER

18.1 In addition to the details furnished in the invoice, supplier shall generate DISPATCH NUMBER (DN) against each invoice. The DN shall be 3 digit continuous number starting from 001 suffixed to purchase Order Number and shall be unique to each invoice. Same shall also be printed on each consignment / box for easy co-relation. DN shall be quoted in all further communications viz dispatch detail to inspection, correspondence with site as well as for payment purpose. Mentioning the DN on each invoice shall be mandatory.

19 TERMS & CONDITIONS FOR SUPERVISION OF ERECTION, TESTING & COMMISSIONING / TRAINING AT SITE/HAZOP STUDY

19.1 Terms & conditions for supervision of erection, testing & commissioning / training at site shall be as per attached Annexure-III to SPC.

20 TERMS & CONDITIONS FOR INSTALLATION / SITE WORK

20.1 Terms & conditions for installation/ site work shall be as per attached Annexure-IV to SPC.

21 TERMS & CONDITIONS FOR ANNUAL MAINTENANCE CONTRACT (AMC)

21.1 Terms & conditions for Annual Maintenance Contract (AMC) shall be as per attached Annexure-V to SPC.

22 TERMS & CONDITIONS FOR TRAINING OF OWNER PERSONNEL AS PER MR AT VENDOR'S WORKS / TRAINING FACILITY

22.1 Terms & conditions for training of owner personnel as per MR at vendor's works/ training facility shall be as per attached Annexure-VI to SPC.

23 WARRANTY:

23.1 The Seller will guarantee that all materials and equipment shall be repaired or replaced as the case may be, at his own expense, in case the same have been found to be defective in respect of material, workmanship or smooth and rated operation within a period 12 months after the equipment/ material have been put in service or 24 months from the date of shipment, whichever is earlier. Repaired or replaced equipment/ materials shall be similarly guaranteed by the SELLER for a period of twelve (12) months from the date of replacement/ repair subject to a maximum of 24 months from the date, the main equipment/ material has been put in service. All expenses for such replacement/ repair of equipment/ material shall be to the account of the Seller including freight, if any."

24 RECOVERY OF SUMS DUE:

Clause No. 25 of GCC stands modified to the following extent:

The phrase *"(he is hereby irrevocably authorized to do so)"* stands DELETED

Annexure I to SCC

TERMS & CONDITIONS FOR INDIAN SOURCED COMPONENTS BY FOREIGN BIDDER

Foreign bidder may source components / sub-supplies and services from India, if allowed as per Material Requisition. For such sub-supplies / services, Commercial Terms & Conditions of the RFQ shall stand modified to the following extent:

1. PRICING:

1.1 Unit and total price on FOT Despatch Point basis including packing and forwarding charges.

1.2 Details of Taxes and duties (rates) payable extra on the finished goods, applicable on Indian sub- suppliers.

1.3 Separate and clear break-up of charges for inland transportation is to be quoted by the bidder.

1.4 Materials if ordered against the RFQ are required to be dispatched on door delivery basis.

1.5 Transit insurance of Indian sub supplies shall be borne and arranged by the PLL.

1.6 Indian counterpart of Foreign Bidder shall procure the items from EIL enlisted suppliers.

2. CURRENCY OF QUOTE:

The quoted price of sub-supplies shall be in Indian Rupees only.

3. AWARD OFORDER:

Foreign Principal shall be the single point responsible Vendor and separate order on foreign supplier and Indian sub-supplier / sub-contractor is not acceptable. Single Purchase order shall be issued on the foreign principal clearly indicating the sub-supplier's / sub-contractor's name, material and corresponding price in Indian Rupees.

4. DELIVERY:

The delivery period for sub-supplies shall be on FOT site basis within specified delivery period for foreign bidder as per Terms of RFQ/Bidding document.

5. PRICE REDUCTIONSCHEDULE:

PRS shall be applicable in totality on foreign scope + Indian sourced component / site work for delay in supply of goods/ site work either by foreign principals or Indian counterpart.

6. PAYMENTTERMS:

Payment of Indian sub supplies:

- 85% through E-Payment with taxes and duties will be paid against receipt of Indian sourced goods/material at Project Site.
- 10% against receipt of Indian supplies at site and delivery of main equipment by foreign bidder, as per Terms of bidding document and completion of site work, wherever applicable.
- 5% on submission of Final/As built Drawings/Documents/Data/Manual in requisite number of copies/sets/CDs as per VDR specified in Purchase Requisition, by main bidder.

Payment of Indian services:

- Shall be as per BDS.

Note:

- Payment of Indian sub supplies/Services shall be released directly to Indian counterpart against Invoices raised by Indian counterpart duly certified by foreign principal.
- In case of Foreign bids with Indian sub supplies, the payment terms of Foreign bidder against shipping documents stands reduced by 5% which shall be released as follows:

  5% payment shall be released thru wire transfer, on delivery of main equipment by foreign principal (as per terms of enquiry document) as well as receipt of Indian supplies at site.
- The payments shall be made after adjustment of Price Reduction Schedule.
- If foreign principal delivers all their foreign sourced goods with Indian sourced delivery yet to be completed and further requests for release of last 10% payment, then this last 10% shall be released to foreign principal by PLL against the submission of bank guarantee for this 10% of order value valid for 03 months from CDD plus 1 month claim period or till completion of Indian sourced items, whichever is later.

7. CONTRACT PERFORMANCE BANKGUARANTEE:

Foreign principal shall submit the Contract performance bank guarantee for 10% of Total Order Value including value of foreign portion and Indian sourced components / site work.

TAXES & DUTIES

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A. Price basis w.r.t inclusion/exclusion of taxes and duties

1. The quoted price(s) shall be inclusive of all the taxes and duties except GST (i.e. IGST or CGST and SGST/UTGST applicable in case of interstate supply or intra state supply respectively) and GST compensation cess, (if applicable) leviable on sale of finished goods/services.
2. In case of foreign bidders, bidders shall submit their prices on FOB international sea port of exit basis/CFR on destination port basis (INCOTERM 2020), unless otherwise stated in the bid document. FOB/CFR prices quoted shall be inclusive of all applicable taxes up to FOB international sea port of exit/CFR on destination port basis.
3. Transportation charges (if applicable) up to respective project site shall be exclusive of GST.
4. Site work prices, if applicable shall be inclusive of all taxes and duties except GST. All necessary registrations, if required, for carrying out the site activities shall be done by the bidder and costs towards the same shall be included in quoted site work prices.
5. Prices of per diem supervision charges, training/AMC, HAZOP Study etc. (as applicable) shall be exclusive of GST. However, GST shall not be applicable on training provided at foreign bidder's work/training facilities in any territory other than India.

B. TAX CLAUSES

1. Goods and Services Tax

a. The supplier/contractor will be liable to register with the respective tax authorities and to submit self-attested copy of such registration certificates and the supplier/contractor will be responsible for procurement of goods/services in its own registration (GSTN).

b. Supplier/Contractor shall be required to issue tax invoice in the form and manner prescribed under GST Act read with Rules thereunder including E-Invoicing provisions so that input tax credit under GST can be availed by Owner. In the event that the supplier/contractor fails to provide the Tax Invoice/E-Invoice in the form and manner prescribed under the GST act read with GST invoicing rules thereunder, Owner shall not be liable to make any payment on account of GST against such invoice.

c. In case supplier/contractor is not subject to E-Invoicing provisions under the GST Laws as amended from time to time, then a declaration to this effect

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shall be furnished by the supplier/contractor in format prescribed along with the Invoice.

d. GST shall be paid to supplier/contractor against receipt of Tax Invoice/E-Invoice and on auto-population of input tax credit on GSTN portal. In case of non-receipt of Tax Invoice/E-Invoice and/or non-auto-population of input tax credit on GSTN portal, Owner shall with hold the payment of GST.

e. The supplier/contractor shall always comply with the requirements of applicable laws and provide necessary documents as prescribed under the rules and regulations, as applicable from time to time. In particular, if any tax credit, refund or any other benefit Is denied/delayed to Owner or any interest/penalty is charged to Owner due to any non-compliance/ delayed compliance by the supplier/contractor under the GST Law (including but not limited to failure to upload the details of the sale on GSTN portal, failure to pay GST to the government or due to non-furnishing or furnishing of incorrect or incomplete documents, non-filing of GST return by the supplier/contractor), the supplier/contractor shall be liable to reimburse Owner for all such losses and other consequences including but not limited to the tax loss, interest and penalty. Owner shall be entitled to recover such amount from the supplier/contractor by way of adjustment from the next invoice, encashment of BG or by way of any other means either of same project or any other project of the Owner.

f. In case of any Advance including Mobilization/Secured/Other Advance is granted to supplier/contractor as per the provisions of Contract, then the supplier/contractor shall issue a Receipt Voucher / GST Invoice in the form and manner prescribed under GST Act read with Rules thereunder including e-invoicing provisions.

g. In case of any Price Variation as per the provisions of Contract, the supplier/contractor shall issue an Invoice in the form and manner prescribed under the GST Act read with Rules thereunder including e-invoicing provisions.

h. GST payable under reverse charge for specified services/goods under GST Act read with Rules thereunder, if any, shall not be paid to the supplier/contractor but will be directly deposited by Owner to the appropriate Government Tax Authority. If the same has already been reimbursed / paid to the supplier/contractor for any reason whatsoever, then Owner shall be entitled to deduct/set off /recover such amount against any amounts paid/payable by Owner to supplier/contractor.

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i. Where Owner has the obligation to discharge GST liability under reverse charge mechanism and Owner has paid or is liable to pay GST to the government on which interest/penalty becomes payable as per GST law for any reason which is not attributable to Owner or Input Tax Credit w.r.t. such payment is not available to Owner for any reason which is not attributable to Owner, then Owner shall be entitled to deduct/set off /recover such amount against any amounts paid/payable by Owner to contractor/supplier.

j. TDS under GST, if applicable shall be deducted from supplier/contractor bills at applicable rates and a certificate as per rules for tax so deducted shall be provided to supplier/contractor.

k. The supplier/contractor will be under obligation for charging correct rate of tax as prescribed under the respective tax laws. Further the supplier/contractor shall avail and pass on benefits of all exemptions/concessions available under applicable tax laws.

l. In case bidder is covered under composition scheme under GST law, then bidder shall quote the price inclusive of GST. Further, such bidder should mention "Covered under GST Composition Scheme" in column for GST of relevant price schedule(s). In case subsequently such bidder gets covered under regular GST regime, the prices including GST under regular GST regime shall not exceed the prices quoted by the bidder under composition scheme.

m. Owner prefers to deal with registered supplier/contractor of goods/services under GST. Therefore, bidders are requested to get themselves registered under GST, If not registered yet. However, in case any unregistered bidder is submitting bid, their prices will be loaded with applicable GST while evaluation of bid as per evaluation methodology of tender document. However, where Owner is entitled for input credit of GST, the same will be considered for evaluation of bid as per evaluation methodology of tender document.

n. In case of foreign bidders, for supervision/site-work/training, services provided by foreign bidder at project site, GST shall be paid by Owner directly to appropriate Government Tax Authorities, under Reverse Charge Mechanism, if applicable and price of such services will be loaded with applicable GST while evaluation of bid as per clause E (Evaluation methodology).

o. Bidder will be required to quote applicable tax rate (along with applicable HSN/SAC Code) as per provisions of GST Laws for all the line items forming part of the enquiry. Any higher rate of tax actually invoiced in excess of

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quoted rate of tax (except in compliance with provisions of Statutory Variation clauses) shall be adjusted in basic price.

p. In case of delay in supply/execution of contract, supplier/contractor shall be liable to raise invoices for reduced value as per Price Reduction Schedule (PRS) provision of the bidding document. In case the supplier/contractor raises invoices for full value, then supplier/contractor shall issue Credit Note, in the form and manner prescribed under relevant GST Act read with Rules thereunder, towards applicable PRS amount with applicable GST thereon.

In case supplier/contractor fails to submit invoices with reduced value or does not issue Credit Note as mentioned above, Owner shall release payment to the supplier/contractor after giving effect to the PRS clause with corresponding reduction in taxes from invoice(s) of supplier/contractor.

In case any financial implication arises on Owner due to issuance of invoice without reduction in prices or non-issuance of Credit Note by supplier/contractor, the same shall be to the account of supplier/contractor. Owner shall be entitled to recover the amount of such financial implication paid or becoming payable by Owner together with penalty and interest thereon, if any.

q. E-way bills shall be issued directly by supplier/contractor in all cases except in cases of direct imports by Owner where E-way bill shall be issued by Owner.

r. In case of applicability of any recovery as per provisions of the contract, Owner shall raise Invoice on supplier/contractor after charging GST at applicable rates as per prevailing provisions of GST Laws.

2. IMPORT DUTIES

a. Direct supplies by foreign suppliers where, client becomes consignee :
   i. Consignee shall be Owner, bill of entry shall be filed by Owner, all import duties, Social Welfare Surcharge, IGST and GST Compensation Cess etc. as applicable in India shall be paid by Owner.

b. Imported supplies by Indian suppliers as built in import content where Suppliers/Contractors will become consignee of the goods by filling Bill of Entry for Home consumption
   i. Custom duties, Social Welfare Surcharge, IGST, GST Compensation Cess, etc. as applicable in India on the imported materials shall be included in the quoted prices by the bidder (considering the input tax credit of IGST, GST Compensation Cess on imported material) and supplier/contractor shall be responsible for the timely payment of the

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custom duties to the relevant government authority. All harbor dues/ pilotage fees, port fees, wharfage, unloading costs, demurrage charges etc. incurred in India in respect of any imported goods shall be to supplier's/contractor's account.

ii. Bidder to indicate, in relevant price schedule, CIF value of built-in import content and applicable merit rate of custom duty, Social Welfare Surcharge on custom duty (considering the input tax credit of IGST, GST Compensation Cess on imported material) included in quoted price, in the price schedule.

iii. In case merit rate of custom duty is applicable and bids are invited on the basis of same, however at a later stage concessional rate of custom duty becomes applicable, concessional certificate shall be issued towards import of material against the advance request letter submitted by the domestic bidder and the differential custom duties between concessional rate and quoted merit rate of custom duty by supplier/contractor shall be passed on to the Owner or it shall be recovered by the Owner from the supplier/contractor's invoice.

iv. The supplier/contractor shall be responsible for and shall exercise due diligence in properly classifying the goods and materials, undertaking the payment of custom duties, and/or otherwise complying with all applicable laws w.r.t. import of the goods and materials.

v. If bidder does not furnish built in CIF value and rates of custom duty, in that case bidder shall not be entitled to claim any variation in the custom duties even if bidder has quoted their prices considering custom duties.

vi. If custom duty rate actually paid on import of materials and components is found to be lower than the quoted rate of custom duty, then benefit of the same shall be passed on to the Owner.

vii. If bidder has considered Import Duty other than Merit Rate of Import Duty then statutory variation on the Import Duty shall be payable extra on the Merit Rate of Import Duty or the rate of Import Duty considered by the bidder, whichever is lower.

viii. In case, no import is made for execution of the order, clauses related to Imports will not be applicable.

c. General points:

i. In case Owner is exposed to any penal action, interest /penalties by the custom authorities for incorrect declaration and / or valuation of the goods or material by the supplier/contractor, or otherwise on account of any breach of applicable laws in the course of the import of the goods and material by supplier/contractor, the supplier/contractor shall indemnify and hold harmless the Owner for any and all costs, expenses or losses suffered or incurred by Owner in this regard

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ii. If bidder intends to source import of goods from a country with which India has Free Trade Agreement (FTA) or Comprehensive Economic Partnership Agreement (CEPA) or any such multi-lateral / bi-lateral Agreement or Treaty with India or under Generalized System of Preference (GSP); or under any other notification (allowing lower rate of custom duty), then the bidder is advised to ascertain and confirm its applicability along with supporting documents in the bid and ensure that conditions of such agreement/treaty etc. are strictly complied with.

iii. The bidder shall be liable to provide all documentation to ensure availment of the exemption/waiver. In case the bidder defaults on this due to any reason, whatsoever, he shall be liable to bear the incremental custom duty applicable if any

iv. Any additional custom duty applicability on account of any change in the notification (allowing lower rate of custom duty)/ CEPA/FTA/multi-lateral/bi-lateral trade agreement shall be to bidder's account.

v. Documentation to be furnished for availing the exemption /waiver of custom duty shall be specifically listed in the letter of credit also as a prerequisite for release of payment against shipping documents and this documentation shall necessarily form a part of shipping documents.

vi. Owner will not bear any liability towards payment of Safeguard Duty, Anti-Dumping Duty, Protective Duty and applicable IGST including GST Cess on same or Countervailing Duty on subsidized articles or any other such duties of Customs imposed by Government under Customs Tariff Act, 1975.

vii. In case custom duty rate as quoted by Foreign bidder is less than Actual rate applicable on due date of submission of last price bid and payment of custom duty is on Owner's Account, differential amount on account of above-mentioned rate variation will be recovered from Foreign bidder.

3. INCOME TAX

a. Foreign supervisors/suppliers/contractors

Prices of site work, contracts and other services of foreign supplier/contractor shall be gross of income tax i.e., inclusive of Indian

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income tax at the applicable prevailing rate as per Indian Income Tax Act and Rules there under.

Owner shall deduct withholding tax at source (TDS) as applicable while making payments against each invoice. Certificate for TDS shall be provided to the supplier/contractor.

In case foreign bidder quotes Prices of site work, contracts and other services "net of Income Tax" i.e., exclusive of Indian income tax, Owner shall deduct and deposit TDS as applicable after grossing up the sums due while making payments against each invoice at the applicable prevailing rate as per Indian Income Tax Act and Rules thereunder.

Foreign bidder shall furnish the information required in line with the prevalent provisions of Income tax act read with rules thereunder including but not limited to Tax residency certificate, Form 10F, No permanent establishment declaration, No business connection certificate, PAN in India if available.

Failing to provide above documents/information, tax will be withheld at rates applicable as per the provisions of Income Tax Act, 1961 read with rules thereunder and the benefit of reduced rates will not be given.

If the non-resident is unable to obtain & submit Tax Residency Certificate to the Owner within a reasonable time, the bidder should furnish Form 10F along with an undertaking to the effect that the bidder is a tax resident of (the specified country) and that they shall obtain and provide the tax residency certificate (TRC) to the Owner before 30 days of submission of first Invoice by them or within 3 months from the date of entering into contract whichever is earlier.

In case of contracts with term exceeding one financial year, the relevant documents like TRC, Form 10 F, No PE / Business Connection Certificate etc. as applicable, as per Income Tax Act, 1961 must be submitted at the beginning of each financial year and the Owner will not bear additional tax liability (if any) arising from non-submission of documents.

The bidder shall be liable to intimate the subsequent changes (if any) to the information submitted against any of the above particulars, along with full details.

In addition to the above particulars, the bidder should also provide any other information as may be required at a later stage for determining the taxability of the amount to be remitted to the non-residents.

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In case, any additional tax liability arises on the Owner due to any action of bidder like delay in submission / non-submission of information / documents required as above or change in residential status post submission of documents or change in any document (like TRC, Form 10F etc.) after its submission shall be recovered from the supplier/contractor.

b. Indian resident supervisors/ suppliers/contractors

Prices for supply and services of Indian suppliers/ contractors shall be inclusive of income tax.

Tax shall be deducted at source (TDS) by Owner on all sums due to supplier/contractor in accordance with the provisions of Indian Income Tax act read with rules thereunder as in force at the relevant point of time.

Owner shall issue a Tax Deduction Certificate to the supplier/contractor evidencing the tax deducted or withheld and deposited by Owner on payments made to the supplier/contractor to enable the supplier/contractor to claim the credit of Tax deducted by Owner.

c. INCOME TAX (General Points):-

i. The supplier/contractor shall also be responsible for ensuring compliance with all applicable provisions of the Direct Tax Laws of India including, but not limited to, the filing of relevant Tax Returns and shall promptly provide all information required by the Owner for discharging any of its responsibilities/liabilities under such laws in relation to or arising out of the Contract. For the lapses/failure, if any, on the part of the supplier/contractor and consequential penal action taken by the Income Tax department, Owner shall not take any responsibility whether financial or otherwise and shall be indemnified by the supplier/contractor.

ii. The Indian Income Tax Act and Rules made thereunder contains provisions permitting deduction of tax at source (TDS) at lesser rate if the supplier/contractor is able to justify to the Income Tax Authorities such lesser rate of deduction. However, a deduction once made has to be deposited by the Owner with the Income Tax Authorities in India and will not be adjustable by the Owner. It is therefore in the interest of the supplier/contractor that prior to release of any payment due to the supplier/contractor under the Contract that the supplier/contractor obtains from the relevant Income Tax Authorities in India, a certificate specifying the rate of deduction/withholding of Income tax at source, failing which, payment to the

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supplier/contractor shall be made by the Owner after withholding/deduction at the rate as may be applicable to the supplier/contractor as per provisions of Income Tax Act, 1961.

iii. TDS on interest recovered on Mobilization/Other Advance will be deposited by the supplier/contractor and same would be reimbursed by the Owner against submission of Form-16A (TDS certificate).

C. INVOICING METHODOLOGY W.R.T. TAXATION

following invoicing methodology shall be applicable:

1. In case of domestic / foreign PO's (Other than 2 below) , Invoice/E-Invoice shall be raised by the supplier/contractor in the name of Owner and consignee shall be Owner.
2. In case of package MR's (where title transfer or take over is envisaged to take place at site after completion of site work) and tenders, supplier/contractor shall bring material at project site in their own name and they themselves shall be consignee. As per provisions of contract between Owner and supplier/contractor, Invoice/E-Invoice shall be raised by supplier/contractor to Owner after charging GST.

D. APPLICABILITY OF TAX CREDIT

GST input credit is available to Owner.

E. EVALUATION METHODOLOGY W.R.T. TAXES

Following shall be loaded for evaluation:

1. Applicable Custom Duty, Social Welfare Surcharge etc, (excluding IGST & GST Compensation Cess (if applicable) on imported material which shall be dealt as per bid evaluation methodology given in E2 below) shall be loaded for price bid evaluation in respect of supplies for which bill of entry has to be filled by Owner.
2. GST on which input credit is not available to Owner including GST Compensation Cess (if applicable).
3. Applicable Income tax, in case foreign bidder quotes prices net of taxes.

F. TAXATION TERMS FOR INDIAN SOURCED SUPPLIES (Applicable in case of foreign supplier)

Shall be the same as applicable for Indian bidders.

G. TAX IMPLICATION WHERE FABRICATION YARD IS OUTSIDE THE FACTORY PREMISES, WHEREVER APPLICABLE

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In case of package MRs and tenders, since contractors/suppliers shall bring material at project site in their own name and raise invoice to Owner (as per payment milestone achieved) after charging GST, location of fabrication yard whether inside or outside factory premises will not attract any additional liability.

H. TAX IMPLICATION WHERE OWNER WILL ISSUE FREE ISSUE MATERIAL (FIM) TO CONTRACTORS/SUPPLIERS

Where Owner issues FIM's to suppliers/contractors, material will be released against delivery challan and such FIM shall be received back in factory premises as per provision of GST.

I. STATUTORY VARIATION

No variation on account of taxes and duties, statutory or otherwise, shall be payable to Supplier/Contractor except for the following:

1. GST: If after the due date of submission of last price bid and up to the contractual delivery/completion period (*Note 4), any increase/decrease occurs in the applicable rate of GST, the variation in such GST shall be to Owner's account and shall be adjusted (increase / decrease) to / from the Supplier's/Contractor's invoices based on the documentary evidence.

   Any increase in GST after the contractual delivery/completion period (*Note 4) shall be to Supplier's/Contractor's account. However, any decrease in the rate of GST shall be passed on to Owner.

   For calculating Statutory Variations ceiling amount as declared by the Bidder in price schedule shall only be considered.

2. Basic Custom Duty (BCD) & Social Welfare Surcharge (SWS): If after the due date of submission of last price bid and upto the XX (*Note-3) of contractual delivery/completion period (*Note 4), any increase/decrease occurs in the applicable rate of BCD & SWS on materials imported, the variation in such BCD & SWS shall be to Owner's account and shall be adjusted (increase/decrease) to/from the Supplier's/Contractor's invoices based on the documentary evidence.

   Any increase in rate of BCD & SWS on materials imported after the XX (*Note-3) of the contractual delivery/completion period (*Note 4) shall be to Supplier's/Contractor's account. However, any decrease in the rate of BCS & SWS on materials imported shall be passed on to Owner.

   For calculating Statutory Variations in BCD/SWS, ceiling amount of CIF Value and rate of custom duty as declared by the Bidder in relevant price schedule shall only be considered.

Note: Indian supplier/contractor to consider input tax credit of IGST and GST Compensation Cess if any (in case of import of raw Materials / components)

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in their quoted prices. Hence, Statutory variations on same in case of imported materials from outside India in Supplier's/Contractor's name (i.e., for Indian Bidders) shall be to Supplier/Contractor account.

3. Any new output taxes, duties, cess, levies notified or imposed after the due date of submission of last price bid but upto the contractual date of delivery/completion (*Note 4) shall be to Owner's account. These shall be reimbursed against documentary evidence. However, in case of delay attributable to supplier/contractor, any new output taxes, duties, cess, levies notified or imposed after Time for Completion, defined as above, shall be to supplier's/Contractor's account.

J. TAX INDEMNITY

Any omission/ errors of interpretation of applicability of taxes, duties, cesses and levies, whatsoever named, howsoever named, as are payable to any government, local or statutory authority in India or in any country other than India by the supplier/contractor shall be to supplier's/contractor's account.

If any fine/penalty/any other levy is required to be met by the Owner arising out of any non-compliance/fault/fraud/willful suppression/misstatement of facts/information/documents, whatsoever, of any applicable laws of India or any country other than India by the supplier/contractor/their personnel/sub-contractors/agencies, the same shall be recovered from any amount payable to the supplier/contractor under this contract or under any other contract of the Owner.

If any tax is paid / required to be paid by supplier/contractor in pursuance of any demand of any law enforcement agency/Tax Authority on account of non-compliance/fault/fraud/willful suppression/misstatement of facts/information/documents, whatsoever, of any applicable laws of India or any country other than India by the supplier/contractor/their personnel/sub-contractors/agencies, the same shall be to supplier's/contractor's account only.

GENERAL:

1. *Note-1 : Deleted.
2. *Note-2 : Deleted
3. *Note-3 Time period shall be till the **Contractual Completion/Delivery period.**
4. *Note-4 Contractual delivery/completion period shall include extended contractual delivery/completion period for the reasons attributable to Owner or due to Force Majeure condition.

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ANNEXURE –III TO SPECIAL CONDITIONS OF CONTRACT

TERMS & CONDITIONS FOR SUPERVISION OF ERECTION, TESTING & COMMISSIONING/TRAINING AT SITE/HAZOP STUDY

TERMS & CONDITIONS FOR SUPERVISION OF ERECTION, TESTING & COMMISSIONING/TRAINING AT SITE/HAZOP STUDY

1. Bidder shall quote per diem charges which shall include lodging, boarding, medical, local transport, all insurances including Bidder's personnel and third party insurance, all other incidental charges and all taxes & duties except GST (for bidders registered in India) which shall be quoted extra and shall be payable against submission of Invoice as per GST rules.

2. Tax(s) as per Government policy shall be deducted at source by Purchaser while making payments against each invoice.

3. **For Foreign Bidders**: To & fro air fare by economy class through most economical route ***(Baroda / Ahmedabad / Surat Airport, Gujarat)*** and/or AC 2 Tier by Train Fare **(*)** within India nearest to site, will be reimbursed at actual. Local transportation in bidder's country shall be to bidder's account.

4. **For Indian Bidders**: To & fro air fare within India by economy class through most economical route ***(Baroda / Ahmedabad / Surat Airport, Gujarat)*** and/or AC 2 Tier by Train Fare**(*)** nearest to site, will be reimbursed at actual. Indian bidder

   (*)In case a bidder travel's by any other mode of transport, the payment shall be made against documentary evidence subject to maximum of AC 2 Tier train fare.

5. Per diem charges shall be payable from the day bidder's person reports at site to Engineer In charge and up to the day he leaves the site after clearance from Engineer In charge. No payment will be made for travel days/period.

6. In case bidder's representative is not called for during Intervening weekly off/Holidays, the same shall be payable at the normal rate of site services. However, in case Seller's representative is called at site during weekly off/Holiday, the same shall be paid @ overtime rate quoted extra by bidder.

7. In case bidder's representative takes leave, per diem charges for that day shall not be payable.

8. Working hours prevailing at site, normally 8 hours/day - Monday through Saturday and holidays as applicable to Purchaser's site personnel shall apply.

9. Selection of Foreign/ Indian supervisory personnel shall be left to Owner's/Purchaser's choice.

10. Supplier's supervisory personnel shall observe/abide by site working conditions prevailing at the existing site, safety codes, Indian laws and local laws.

11. A notice period of 15 days will be given for mobilization of supervisory personnel for supervision of erection.

12. Validity period of per diem rate shall be upto the end of guarantee period. Further, in case services for supervision are required after the guarantee period, 5% annual escalation shall be applicable.

13. Payment: 100% against monthly bills to be submitted by supplier duly certified by the Engineer-in-Charge.

14. Requirement of Employment Visa for Foreign Nationals

All foreign nationals coming to India for execution of Projects / Orders will have to apply for Employment Visa only and that grant of Employment Visa would be subject to strict adherence of following norms:

i) Employment Visa is granted only for the skilled and qualified professional or to a person who is being engaged or appointed by a company, organization, Industry or undertaking etc. in India on contract or employment basis at a senior level, skilled position such as technical expert, senior executive or in managerial position etc.

ii) Request for employment Visa for jobs for which large number of qualified Indian are available, is not considered.

iii) Under no circumstances an Employment Visa is granted for routine, ordinary secretarial / clerical jobs.

Bidders are advised in their own interest to check latest Visa rules from Indian Embassy/ High Commission in their country in case foreign nationals are required to be deputed to Indian during execution of the Order.

CHARGES FOR SUPERVISION OF ERECTION / TESTING / COMMISSIONING & PGTR:

S.No.	Description	Supplier's Reply/Information (TO BE QUOTED IN PRICE SCHEDULE) / Currency
1.	Per diem charges (per person) for 8 hours work on normal working days (Monday to Saturday)	TO BE QUOTED IN PRICE SCHEDULE / Day
2.	Overtime rate/hour beyond normal 8 hours work on normal working days.	TO BE QUOTED IN PRICE SCHEDULE / Hour
3.	Overtime rate/hour for work on weekly off days/holidays (as applicable at Project site).	TO BE QUOTED IN PRICE SCHEDULE / Hour

Notes:

1. Quoted per diem rate shall be considered in the evaluation as per RFQ Document.

Bidder's Acceptance:

RFQ No.:
Item:
Offer No.:

Signature with Name & Date and
Seal/Stamp of the Bidder

ANNEXURE –IV TO SPECIAL CONDITIONS OF CONTRACT

TERMS & CONDITIONS FOR SITE WORK

TERMS & CONDITIONS FOR SITE WORK

1. The Supplier shall perform their jobs in eco-friendly manner and in consonance with the objectives of PLL environment management system.
2. The construction / erection work for several other project facilities at various locations within PLL site will be progressing concurrently. It will be the responsibility of Supplier to seek approvals from the Owner for working within & outside the battery limits and also of taking all suitable safety measures as per regulations in force for the safety of the facility.
3. The material shall be collected by the supplier from owner's stores/Project Site/supplier's own stores (as the case may be) and transported to the erection site at supplier's cost and risk.
4. All labour (both skilled and unskilled), tools, tackles and consumables, shall be arranged by supplier at his own cost.
5. Supplier shall arrange for the necessary transport, accommodation, medical, canteen and other facilities for their employees/staff at their own cost and abide by all labour laws, safety codes and statutory regulations and keep Owner indemnified in respect hereof.
6. The Supplier is responsible for keeping his work place neat and clean and shall always avoid scattering of any materials around the work place. The Supplier shall clear the work site of all debris, materials, tools, tackles etc. immediately upon completion of the job. Any temporary Line/cables etc. laid for the purpose of execution of a particular job shall be immediately removed to an agreed location and the site cleared off all such materials.
7. The Supplier shall not throw out gaskets, used electrode pieces, hand gloves, cotton wastes, gunny bags, polythene bags etc. into open channel, any drains or pipe line system. These are to be collected together and deposited in bins/waste collectors earmarked for the purpose of disposal after consultation with Engineer-in-Charge.
8. Construction Power shall be provided by PLL free of cost. The free power shall be provided at designated locations only. Supplier to make all necessary arrangements for taking the power to their required locations.
9. Construction Water shall be provided by PLL free of cost. The water shall be provided at designated locations only. Supplier to make all necessary arrangements for taking the water to their required locations. Drinking water shall be arranged by the supplier at their own cost.
10. Crane, if required shall be in the scope of supplier, unless otherwise specified in Material Requisition.
11. As per the applicable Factory Act the Labour License if required, shall be taken by Supplier before starting the works.

RFQ NO:	**SUPPLIER'S SIGNATURE & DATE:**
ITEM:	**NAME:**
OFFER NO:	**DESIGNATION:**

ANNEXURE –V
TO
SPECIAL CONDITIONS OF CONTRACT
TERMS & CONDITIONS
FOR
ANNUAL MAINTENANCE CONTRACT (AMC)

ANNUAL MAINTENANCE CONTRACT (AMC)

(TERMS & CONDITIONS)

1. Bidder shall quote for the Post Warranty Annual Maintenance Contract as per scope defined in Material Requisition / Technical portion for a period of 5 years. Please furnish the year wiseBreak-up as per the Price Schedule.
2. The AMC Charges quoted in Price Schedule Format shall be inclusive of all the charges for Transportation, Lodging, Boarding, all insurances including third party insurance, all Taxes & Duties and all other incidental charges etc. but excluding GST which shall be payable extra at actual on Submission of Invoice as per GST rules. Owner will not have any liability, whatsoever, over and above the quoted prices.
3. 100% payment shall be paid at the end of each quarter against quarterly progressive bills to be submitted by the Supplier duly certified by authorized representative of Owner.
4. The order for AMC will be placed before the expiry of contractual Warranty Period. The price of AMC services will remain firm & fixed for the complete execution of AMC contract. In case there is delay in start of AMC from the date of expiry of warranty period, the charges shall be paid on pro rata basis for the duration curtailed from original specified AMC period.
5. Seller shall submit 10% of contract value for a PWAMC contract of one year duration.

   If the duration of PWAMC contract is for more than one year the contract shall provide CPBG of 10% of one year contract value (maximum of the year wise PWAMC charges).

   The validity of CPBG should cover three months beyond total PWAMC contract period.
6. Periodic and Preventive maintenance: Supplier shall depute their engineers to installation site as & when required for regular checkups, as part of periodic maintenance. Supplier shall also depute their service engineers periodically for preventive maintenance, major repairs /replacement and reporting. Price shall also include emergency visits as necessary.
7. Scope of AMC shall be as per MR/Technical portion. The quoted lump sum rate shall include providing all manpower, machineries and materials required to carry out the work as per scope of work of AMC defined in the MR.

ANNEXURE –VI
TO
SPECIAL CONDITIONS OF CONTRACT

TERMS & CONDITIONS FOR TRAINING AT SUPPLIER/OEM WORKS

TERMS & CONDITIONS FOR TRAINING

1. Bidder shall quote Training charges of Owner's Operation and Maintenance personnel at Bidder's works/training facility on lumpsum basis (as per scope defined in the Material Requisition).
2. All expenses including but not limited to Air-fare, accommodation, local conveyance, living expenses etc. of Owner's personnel shall be borne by Purchaser.
3. Quoted prices shall be inclusive of all taxes & duties except GST which shall be payable extra at actuals against submission of documents as per GST rules.
4. A notice period of 15 days will be given by EIL/Owner for prior arrangement.
5. PAYMENT TERMS: Shall be as per Bid Data Sheet (BDS).

A. LUMPSUM CHARGES:

Sno	Description	RATE IN CURRENCY
1	Lumpsum charges	Quoted in Price Schedule

FORM OF ADVANCE BANK GUARANTEE
(ON NON-JUDICIAL PAPER OF APPROPRIATE VALUE)

To,
Petronet LNG Limited
4th Floor, Tower-I, World Trade Center
Nauroji Nagar
New Delhi – 110029
Subject: Bank Guarantee No. _____ dated:

WHEREAS, _____(Contractor / Vendor/ Supplier Name) a company incorporated under _____ (Act) having its registered office at _____(hereinafter referred to as the "Contractor"/ "Vendor"/ "Supplier" which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns) has been issued _____ (LOA/order No.), by M/s Petronet LNG Limited having its registered office at 4th Floor, Tower -I, World Trade Center, Nauroji Nagar, New Delhi - 110 029 (hereinafter referred to as the "Owner" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns) for carrying out / supplying _____ (subject), for Owner, and further the parties shall enter into an agreement to execute the scope of work under this LOA/Purchase Order (such agreement shall hereinafter be referred as "Contract").

WHEREAS as per the _____ (Contract/LOA No/ Purchase Order.) the Contractor/Supplier is obliged to furnish to the PLL an irrevocable, unconditional, payable on first demand, bank guarantee issued by specified financial institutions acceptable to the PLL, as mentioned in the said Contract/LOA No. for the advance claimed by the Contractor / Supplier of the Contract.

AND WHEREAS the Bank (as defined herein below) has affirmed that it is one of the scheduled bank and at the request of the Contractor and for sufficient consideration, the Bank has agreed to issue this advance bank guarantee in favor of the PLL.

AND WHEREAS _____ (Bank Name) having its registered office at _____ and a branch office at _____ (insert name of city in India) India, hereinafter referred to as the "Bank" (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its successors), being Acceptable Bank (*refer Sl No. 2 of Instructions for furnishing Bank Guarantee for Criteria of acceptable bank*), has at the request of the Contractor / supplier / Surety agreed to issue this advance bank guarantee in favour of the PLL.

NOW THEREFORE, the Bank hereby undertakes the pecuniary responsibility of the Contractor to the PLL for the due performance of the Contract and for the payment of any money by the Contractor / supplier to the PLL and hereby issues in favour of the PLL this on demand, irrevocable and unconditional and payment bank guarantee (hereinafter referred to as the "Guarantee") on behalf of the Contractor / supplier in the amount of Indian Rupees _____ [*amount claimed for advance for procurement and 110% of advance amount claimed for works , service , consulting contracts*].

The Bank for the purpose hereof unconditionally and irrevocably undertakes to pay to the PLL without any demur, reservation, cavil, protest or recourse; immediately on receipt of first written demand from the PLL, any sum or sums (by way of one or more claims) not exceeding in the aggregate the amount of Indian Rupees_____ (insert an amount) without the PLL requiring to furnish proof or to show / justify to the Bank any ground(s) or reason(s) for such demand for the sum specified therein and notwithstanding any dispute or difference between the PLL and the Contractor in respect of the performance of the Contract or moneys payable by Contractor to the PLL or any matter whatsoever related thereto.

The Bank acknowledges that any such demand by the PLL of the amounts payable by the Bank to the PLL shall be final, binding and conclusive evidence in respect of the amounts payable by the Contractor / supplier to the PLL.

The Bank hereby waives the necessity for the PLL from demanding the aforesaid amount or any part thereof from the Contractor / supplier before enforcement of this Guarantee and also waives any right that the Bank may have of first requiring the PLL to pursue its legal remedies against the Contractor / supplier, before presenting any written demand to the Bank before enforcement / making payment under this Guarantee.

The Bank's obligations under this Guarantee shall not be reduced by reason of any partial performance of the Contract. The Bank's obligations shall not be reduced by any failure by PLL to timely pay or perform any of its obligation(s) under the Contract.

Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future taxes, levies, imposts, duties, charges, fees, commissions, deductions or withholdings of any nature whatsoever provided always nothing herein contained will enlarge our liability hereunder beyond the limit of _____ (*amount claimed for advance for procurement and 110% of advance amount claimed for works service , consulting contracts*)

This Guarantee shall be a continuing bank guarantee until its expiry, i.e. _____ and shall not be discharged by the change in constitution of any member of the Contractor and the Guarantee shall not be affected or discharged by the liquidation, winding up, bankruptcy, re organization, dissolution or insolvency of any member of the Contractor or any other circumstances whatsoever.

This Guarantee shall be in addition to and not in substitution or in derogation of any other security held by the PLL to secure the performance of the obligations of the Contractor under the Contract.
The Bank agrees that the PLL at its option shall be entitled to enforce this Guarantee against the surety, as a principal debtor in the first instance without proceeding at the first instance against the Contractor / Contractor.

Without prejudice to any continuing liability to perform obligations under this Guarantee which have arisen prior thereto, the Bank shall be released from any further obligations arising hereunder after_____.

This Guarantee shall not be assigned or transferred by the Bank.

This Guarantee is subject to the laws of India. Any suit, action, or other proceeding arising out of this Guarantee or the subject matter hereof shall be subject to the exclusive jurisdiction of courts of New Delhi, India. This guarantee is to be returned to the Bank immediately on expiry of the claim period. If the Bank does not receive the bank guarantee latest by the expiry of the claim period, it shall be deemed to be automatically cancelled.

The Bank has the power to issue this Guarantee in favour of the PLL. The aggregate liability of the Bank under this Guarantee shall not under any circumstance exceed Indian Rupees_____ (insert an amount)

In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this_____ day of _____

Notwithstanding anything contained hereinabove:
I. Our liability under the bank guarantee shall not exceed Rs.____
II. The bank guarantee shall be valid upto _____ (30 days plus Contractual delivery date / 30 days plus Contractual Completion date.)

III. The beneficiary's right as well the Bank's liability under this guarantee shall stand extinguished unless a written claim or demand is made under this Guarantee on or before___ (6 months after ABG expiry date) .

_____

(Signature)
Name

_____
Designation with Stamp
Duly authorized representative
Vide power of attorney No. ____
Dated _____
Witness

_____
(On stamp paper of requisite value)

INSTRUCTIONS FOR FURNISHING BANK GUARANTEE

1. Bank Guarantee by Indian Bidders will be given on non-judicial stamp paper as per stamp duty applicable in State of New Delhi. The non-judicial stamp paper should be in name of the issuing bank.

2. **The Advance Bank Guarantee shall be accepted only when issued from a bank fulfilling the criteria of the "Acceptable Bank" as mentioned in Bid Data Sheet (BDS).**

3. The validity of Advance Bank Guarantee shall be 30 days plus Contractual delivery date / 30 days plus Contractual Completion date.

4. Claim Period shall be 06 months beyond BG expiry date.

Request Letter: Transmission of Bank Guarantee Cover Message <to be submitted by Bidder to BG issuing bank>

Date: _____
The Manager,
(Bank),
(Branch)
Sub: Inclusion of unique identifier while transmitting BG cover messages where beneficiary bank is ICICI Bank India

Dear Sir/Ma'am,
I/We, _____, request you to include unique identifier **PLNG574440489 in field 7037** of the SFMS cover messages IFN COV 760 (for BG issuance) and IFN COV 767 (for BG amendment) while transmitting the same to the beneficiary bank (ICICI Bank, IFSC: ICIC00000007). This is required by Petronet LNG Limited as per their tender/contract requirement.

Thanking You,_____

The Template for MT 760-COV (SFMS) for issuing bank is mentioned below:

{
:7020:
:7022:
:7024:ADVANCE
:7025:INRxxxxx
:7026:
:7027:<Date of Issue>
:7029:<Expiry date>
:7030:<Place of Claim Lodgement>
:7031:<Issuing Bank IFSC>
:7032:<Issuing Bank Name>
:7033:<Applicant Name>
:7034:PETRONET LNG LIMITED <Address>
:7035:ICIC0000007
:7036:ICICI BANK LIMITED
:7037:PLNG574440489
-}

PERFORMANCE BANK GUARANTEE
(ON NON-JUDICIAL PAPER OF APPROPRIATE VALUE)

To,
Petronet LNG Limited
4th Floor, Tower-I, World Trade Center
Nauroji Nagar
New Delhi – 110029

Subject : Bank Guarantee No. _____

WHEREAS, _____ *(Contractor / Vendor/ Supplier Name)* a company incorporated under _____ having its registered office at _____(hereinafter referred to as the *"Contractor"/ "Vendor"/ "Supplier"* which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns) has been issued _____, by M/s Petronet LNG Limited having its registered office at 4th Floor, Tower -I, World Trade Center, Nauroji Nagar, New Delhi - 110 029 (hereinafter referred to as the "Owner" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns) for carrying out _____, for Owner, and further the parties shall enter into an agreement to execute the scope of work under this LOA (such agreement shall hereinafter be referred as "Contract").

WHEREAS as per _____ (*Contract/LOA No/ Purchase Order No.*) the Contractor / Supplier is obliged to furnish to the Owner an irrevocable, unconditional, first demand bank guarantee issued by specified financial institutions acceptable to the Owner, for a sum equal to 10% (ten percent) of the Contract Price for the due performance by the Contractor / Supplier of the Contract/ PO.

AND WHEREAS the Bank (as defined herein below) has affirmed that it is one of the scheduled bank and at the request of the Contractor and for sufficient consideration, the Bank has agreed to issue this performance bank guarantee in favor of the Owner.

AND WHEREAS _____ (*Bank Name*) having its head office at _____ and Branch office at _____ (insert name of city in India) India, hereinafter referred to as the "Bank" (which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its successors), being acceptable Bank (*refer Sl No. 2 of Instructions for furnishing Bank Guarantee for Criteria of Acceptable bank mentioned below*), has at the request of the Contractor / supplier / Surety agreed to issue this performance bank guarantee in favour of the Owner.

NOW THEREFORE, the Bank hereby undertakes the pecuniary responsibility of the Contractor to the Owner for the due performance of the Contract and for the payment of any money by the Contractor/ Supplier to the Owner and hereby issues in favour of the Owner this on demand, irrevocable and unconditional performance and payment bank guarantee (hereinafter referred to as the "Guarantee") on behalf of the Contractor / supplier in the amount of Indian Rupees _____ (*insert an amount equal to ten percent (10%) of the Contract Price/ estimated Contract Price*).

The Bank for the purpose hereof unconditionally and irrevocably undertakes to pay to the Owner without any demur, reservation, cavil, protest or recourse; immediately on receipt of first written demand from the Owner, any sum or sums (by way of one or more claims) not exceeding in the aggregate the amount of Indian Rupees _____(*insert an amount equal to ten percent (10%) of the Contract Price/ estimated Contract Price*) without the Owner requiring to furnish proof or to show / justify to the Bank any ground(s) or reason(s) for such demand for the sum specified therein and notwithstanding any dispute or difference between the Owner and the Contractor in respect of the performance of the Contract or moneys payable by Contractor to the Owner or any matter whatsoever related thereto.

The Bank acknowledges that any such demand by the Owner of the amounts payable by the Bank to the Owner shall be final, binding and conclusive evidence in respect of the amounts payable by the Contractor / supplier to the Owner.

The Bank hereby waives the necessity for the PLL from demanding the aforesaid amount or any part thereof from the Contractor / supplier before enforcement of this Guarantee and also waives any right that the Bank may have of first requiring the PLL to pursue its legal remedies against the Contractor / supplier, before presenting any written demand to the Bank before enforcement / making payment under this Guarantee.

The Bank further unconditionally agrees with the Owner that the Owner shall be at liberty, without the Bank's consent and without affecting in any manner the Bank's obligation under this Guarantee, from time to time, to:

(i) vary and/or modify any of the terms and conditions of the LOA/Contract,
(ii) extend and/or postpone the time for performance of the obligations of the Contractor under the LOA/Contract, or
(iii) forbear or enforce any of the rights exercisable by the Owner against the Contractor under the terms and conditions of the Contract

and the Bank shall not be relieved from its liability by reason of any such act or omission on the part of the Owner or any indulgence by the Owner to the Contractor or other thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving the Bank of its obligations under this Guarantee.

The Bank's obligations under this Guarantee shall not be reduced by reason of any partial performance of the Contract. The Bank's obligations shall not be reduced by any failure by Owner to timely pay or perform any of its obligations under the Contract.

Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future taxes, levies, imposts, duties, charges, fees, commissions, deductions or withholdings of any nature whatsoever and by whomever imposed; and where any withholding on a payment is required by law, the Bank shall comply with such withholding obligations and shall pay such additional amount in respect of such payment such that Owner receives the full amount due hereunder as if no such withholding had occurred.

This Guarantee shall be a continuing bank guarantee until its expiry, i.e. _____and shall not be discharged by the change in constitution of any member of the Contractor and the Guarantee shall not be affected or discharged by the liquidation, winding up, bankruptcy, reorganization, dissolution or insolvency of any member of the Contractor or any other circumstances whatsoever.

This Guarantee shall be in addition to and not in substitution or in derogation of any other security held by the Owner to secure the performance of the obligations of the Contractor under the Contract.

The Bank agrees that the Owner at its option shall be entitled to enforce this Guarantee against the surety, as a principal debtor in the first instance without proceeding at the first instance against the Contractor.

Without prejudice to any continuing liability to perform obligations under this Guarantee which have arisen prior thereto, the Bank shall be released from any further obligations arising hereunder after_____(validity of the guarantee)

This Guarantee shall not be assigned or transferred by the Bank.
This Guarantee is subject to the laws of India. Any suit, action, or other proceeding arising out of this Guarantee or the subject matter hereof shall be subject to the exclusive jurisdiction of courts of New Delhi, India.

The Bank has the power to issue this Guarantee in favour of the Owner. The aggregate liability of the Bank under this Guarantee shall not under any circumstance exceed Indian Rupees _____ (*insert an amount equal to ten percent (10%) of the Contract Price/ estimated Contract Price*).
Capitalised terms not otherwise defined herein shall have their respective meanings given such terms set forth in the Contract.

In witness whereof the Bank, through its authorised officer, has set its hand and stamp on this _____ day of _____
Notwithstanding anything contained hereinabove:

I. Our liability under the bank guarantee shall not exceed Rs._____
II. The bank guarantee shall be valid upto _____
III. The beneficiary's right as well the Bank's liability under this guarantee shall stand extinguished unless a written claim or demand is made under this Guarantee on or before___(6 months after BG expiry date) .

(Signature)
Name_____
Designation with Stamp
Duly authorised representative
Vide power of attorney No. ____
Dated _____
Witness.
_____

INSTRUCTIONS FOR FURNISHING BANK GUARANTEE

1. Bank Guarantee by Indian Bidders will be given on non-judicial stamp paper as per stamp duty applicable in State of New Delhi. The non-judicial stamp paper should be in name of the issuing bank.

1. **The Performance Bank Guarantee shall be accepted only when issued from a bank fulfilling the criteria of the "Acceptable Bank" as mentioned in Bid Data Sheet (BDS).**

2. The expiry date should be arrived at by adding 90 days to the Contract completion / Delivery date plus warrantee/guarantee/defect liability period (if any) as specified in the bidding documents.

3. Claim Period shall be 06 months beyond BG expiry date.

Request Letter: Transmission of Bank Guarantee Cover Message <to be submitted by Bidder to BG issuing bank>

Date: _____
The Manager,
(Bank),
(Branch)
Sub: Inclusion of unique identifier while transmitting BG cover messages where beneficiary bank is ICICI Bank India

Dear Sir/Ma'am,
I/We, _____, request you to include unique identifier PLNG574440489 in field 7037 of the SFMS cover messages IFN COV 760 (for BG issuance) and IFN COV 767 (for BG amendment) while transmitting the same to the beneficiary bank (ICICI Bank, IFSC: ICIC00000007). This is required by Petronet LNG Limited as per their tender/contract requirement.

Thanking You,
_____

The Template for MT 760-COV (SFMS) for issuing bank is mentioned below:

{
:7020:
:7022:
:7024:PERFORMANCE
:7025:INRxxxxx
:7026:
:7027:<Date of Issue>
:7029:<Expiry date>
:7030:<Place of Claim Lodgement>
:7031:<Issuing Bank IFSC>
:7032:<Issuing Bank Name>
:7033:<Applicant Name>
:7034:PETRONET LNG LIMITED <Address>
:7035:ICIC0000007
:7036:ICICI BANK LIMITED
:7037:PLNG574440489
-}

PROFORMA OF SURETY BOND FOR CONTRACT PERFORMANCE SECURITY

(To be executed on non-judicial stamp paper of appropriate value)

Ref..... Guarantee No.....

To,

Petronet LNG Limited
4th Floor, Tower-I, World Trade Center
Nauroji Nagar
New Delhi – 110029

Dear Sir (s),

In consideration of you, Petronet LNG Limited a Company duly incorporated and executing under the laws of India having its office at 04th , 05th and 06th Floor, Tower -I, World Trade Center, Nauroji Nagar, New Delhi - 110 029 (hereinafter referred to as the **"PLL" ,** which expression shall unless it be repugnant to the subject or context thereof include its successors and assigns) having awarded the Contract to [***insert name of the Contractor***] having its registered office at [***insert address of the Contractor***] (hereinafter referred to as the "**Contractor**", which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns) in relation to [***insert Contract Name/Work Description***] pursuant to the Contract Agreement bearing Reference Number [***insert reference number***] (hereinafter collectively referred to as "**Contract Documents**"), we [***insert name of the Insurer***] having our registered office at [***insert registered address of the Guarantor***] and one of its branch at [***insert relevant branch address of the Insurer***], at the request of the Contractor, do hereby irrevocably, unconditionally, and without reservation guarantee the due and faithful performance, discharge and compliance of all the terms, conditions, and obligations under the Contract Documents by the said Contractor and unconditionally undertake to pay to PLL forthwith on first demand without any demur, reservation, recourse, contest, protest, or requiring proof of satisfaction or condition, and without reference to the Contractor, an amount of **INR** _____ **(Rupees** _____ **only)[** ***insert Guarantee Amount]*** (hereinafter referred to as the "**Guaranteed Amount**") as our primary obligation under this Insurance Bond. Any such demand made by PLL on the insurer shall be conclusive, binding and notwithstanding any difference between PLL and the Contractor or any dispute pending before any court, tribunal or any other authority. .

NOW, THEREFORE, the Insurer hereby unconditionally and irrevocably guarantees and affirms as follows:

1. This Insurance Bond (**"Performance Guarantee"**) shall be a continuing guarantee and shall remain in full force and effect till all claims or demands made by the PLL on the Insurer **("Guarantor")** are realised and/or until the PLL discharges this Bond, subject however that the PLL shall have no claims under this Guarantee after [***insert time and date including at least 03 (three) months beyond the defect liability period, plus six months' claim period***] or any written extension(s) thereof.

2. In order to give full effect to this Bond, PLL shall be entitled to treat the Insurer **("Guarantor")** as the Principal Debtor. PLL shall have the fullest liberty without affecting in any way the liability of the Insurer under this Bond / Guarantee from time to time or to vary any of the terms and conditions contained in the said Contract Documents or to extend time for performance of the

Contract or the validity period of the Performance Guarantee or the period for compliance with any obligations by the Contractor or to postpone for any time and from time to time any of the powers exercisable by PLL against the said Contractor and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Contract Documents or the securities available to PLL, and the Guarantor shall not be released from its liability under these presents by any exercise by PLL of the liberty with reference to the matters aforesaid or by reason of time being given to the said Contractor or any other forbearance, act or omission on the part of PLL or any indulgence by PLL to the said Contractor or by any change in the constitution of PLL or its absorption, merger or amalgamation with any other person or any other matter or thing, whatsoever, which under the law relating to Guarantee would but for this provision have the effect of releasing the Guarantor from its such liability.

3. It shall not be necessary for the PLL to proceed against the Contractor before proceeding against the Guarantor and the Guarantee herein contained shall be enforceable against the Insurer / Guarantor as the Principal Debtor notwithstanding the existence of any other undertaking or security for any indebtedness of the Contractor to the PLL and notwithstanding that any such security shall at the time when claim is made against the Guarantor or proceedings taken against the Guarantor hereunder, be outstanding or unrealized.

4. The amount stated by the PLL in any demand, claim or notice if made with reference to this Insurance Bond shall as between the Guarantor and the PLL which shall be final, conclusive and binding with regard to the amount payable by the Guarantor to the PLL hereunder.

5. The liability of the Insurer / Guarantor to PLL under this Guarantee shall remain in full force and effect notwithstanding the existence of any difference or dispute between the Contractor and the PLL, the Contractor and the Guarantor and/or the Guarantor and the PLL or otherwise, howsoever, related to this Insurance Bond or Guarantee or the liability of the Contractor to the PLL, and notwithstanding the existence of any instructions or purported instructions by the Contractor or any other person to the Guarantor not to pay or for any cause withhold or defer payment to the PLL under this Insurance bond / Guarantee, with the intent that notwithstanding the existing of such difference, dispute or instructions, the Guarantor shall be and remain liable to make payment to the PLL in terms thereof.

6. We, the Guarantor, further agree that PLL shall be the sole judge to decide as to whether the Contractor is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the aforesaid Contract Documents and the decision of PLL that the Contractor is in default as aforesaid shall be final and binding on us, notwithstanding any differences between PLL and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority.

7. This Guarantee shall not be determined or affected by the liquidation or winding up or dissolution or change of constitution or insolvency of the Contractor or any change in the legal constitution of the Insurer / Guarantor or the PLL.

8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Insurer / Guarantor and sent via email or by courier or by registered post, to the Insurer / Guarantor at the address set forth herein.

9. We undertake to make the payment on receipt of your notice of claim on us addressed to name of Guarantor along with branch address and delivered at our above branch and/or via email to: [***insert email ID***] which shall be deemed to have been duly authorized to receive the said notice of claim.

10. The Insurer's obligations under this Bond / Guarantee shall not be reduced by reason of any partial performance of the Contract by the Contractor. The Insurer's obligations under this Bond shall not be reduced by any failure by PLL to timely pay or perform any of its obligations under the Contract.

11. We, the Insurer / Guarantor, further undertake not to revoke this Guarantee during its currency except with the previous express consent of PLL in writing.

12. The Insurer / Guarantor declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorised and has full power to execute this Guarantee for and on behalf of the Contractor.

13. This Guarantee issued by us is in full compliance with applicable laws of India, as amended from time to time.

14. This Insurance Bond / Guarantee is for the benefit of PLL and its successors and assigns. This Bond/Guarantee is binding not only on the Guarantor, but also on the Guarantor's successors and permitted assigns. The Guarantor shall not assign its rights and obligations hereunder to any person, insurer, company or other entity unless permitted by PLL in writing.

15. Notwithstanding anything herein:

1 The Insurer's / Guarantor's liability under this Guarantee shall not exceed Rs. [***insert Guarantee Amount***];

2 This Bond / Guarantee shall remain in force until [***insert***];

3 This Bond/ Guarantee shall have additional claim period of [***six***] months thereafter; and

4 The Insurer / Guarantor is liable to pay the Guaranteed amount or any part thereof under this Bond / Guarantee only if PLL serves upon the Guarantor a written claim or demand upon the Guarantor or any branch thereof on or before the aforesaid claim period.

Signed and sealed this [●] day of [●], [●] at [●].

SIGNED, SEALED, AND DELIVERED

For and on behalf of the Guarantor by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

----------o----------o----------o----------o----------

Instructions: -

a) The surety bond shall be from a Surety Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI) as amended from time to time.

b) The surety bond should contain the name, designation and code number of the officer(s) signing the surety bond.

c) The address, telephone number, E-mail and other details of the head office of the surety insurer as well as of issuing branch should be mentioned on the covering letter of issuing branch. The letter may also include any web portal link, from where the Surety Bond can be confirmed by the Company.

d) The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.

युनाइटेड इंडिया इंश्यूरेन्स कंपनी लिमिटेड
United India Insurance Co. Ltd.
(D-24 & E-25, 2nd Floor, Himalaya House, 23, K.G.Marg, New Delhi-110001, India)

MARINE CUM ERECTION INSURANCE POLICY

POLICY NO.: 5003004425P113683258 (SCE) / 5003002125P113683259 (MCE)
UIN NO. IRDAN545CP0066V01200708

PERIOD OF INSURANCE
From 00:00 Hrs of
01/11/2025 To Midnight of
31/03/2028

Insured
M/s PETRONET LNG LIMITED

4TH FLOOR, TOWER I, WORLD TRADE CENTER, NAUROJI NAGAR, NEW DELHI - 110 029, INDIA
110029
SOUTH WEST DELHI, DELHI

Issuing Office Address:
Corporate Cell, Delhi
D-24 & E-25, 2nd Floor, Himalaya House
23, K.G. Marg, New Delhi- 110001, India

1. Policy Schedule

Policy No.	5003004425P113683258 (SCE) / 5003002125P113683259 (MCE)
Policy Type	MARINE CUM ERECTION INSURANCE POLICY
The Insurer	United India Insurance Company Limited Corporate Cell, Delhi D-24 & E-25, 2nd Floor, Himalaya House 23, K.G. Marg, New Delhi- 110001, India
Policy Period	00:00 Hrs of 01/11/2025 to Midnight of 31/03/2028 *including 4 months of testing (including hot testing) and commissioning plus 24 months of Maintenance.*
Unique Reference Code	UII500300EN0123579642526
Co- Insurance Details	1. United India Insurance Co. Ltd., LCB, New Delhi: 50% share 2. ICICI Lombard General Insurance Co. Ltd.: 19% share 3. Bajaj General Insurance Limited: 16.41% share 4. National Insurance Co. Ltd.: 14.59% share
Name of Project	750 KTPA Propane De-Hydrogenation Unit (PDH), 500 KTPA Polypropylene unit (PP) and Ethane & Propane import, storage and transfer facilities at Dahej, in the state of Gujarat, India. ("Project")
Name of Insured	i. Petronet LNG Limited and / or Subsidiaries thereof and / or Joint Ventures / Consortiums including the aforementioned as Principal/Main Contractors. ii. Principals and/or Project Financers and/or Lenders. Lenders are State Bank of India, Bank of Baroda, ICIC Bank and Axis Bank along With SBI CAPS as Security Trustee. iii. President of India iv. Licensors and Project management Consultants for the Project. Project Management Consultant is Engineers India Limited. Licensors are M/s UOP LLC for PDH Unit and M/s Lummus Novolen Technology GMBH for PP Unit v. (a) Other Contractors and/or Sub-contractors of any tier. (b) Architects and/or Consultants and/or Design Bureaux and/or Suppliers and/or their Subsidiaries thereof and / or Joint Ventures / Consortiums (not forming part of i) above, as regards their on-site activities but excluding their design, plan or specification work. but only to the extent that the Insured mentioned in (i) above has, by contract or agreement, agreed to provide such party(ies) with the benefit of this insurance (or part thereof). vi. Any other party having an insurable interest (and not mentioned above) to the extent that the Insured

<table>
<tr><td></td><td>mentioned in (i) above is required by contract or agreement to provide insurance to such party(ies).</td></tr>
<tr><td>Mailing Address</td><td>4TH FLOOR, TOWER I, WORLD TRADE CENTER, NAUROJI NAGAR, NEW DELHI - 110 029, INDIA</td></tr>
<tr><td>Location/s of The Risk</td><td>The proposed Petrochemical complex will be set up at 47.73 hectares of Greenfield land located adjacent to the existing Dahej LNG complex of Petronet LNG Limited (PLL) at GIDC Industrial Estate, Plot No 7 A, Dahej, Taluka Vagra, Distt, Bharuch, Gujarat, Bharuch, 392130 and coming under Gujarat Industrial Development Corporation (GIDC). Geographical Location is given in Toposheet no. F43M5-46 C5, F43M6-46 C6, F43M9-46 C9 & F43M10-46 C10 of Survey of India (SoI) Map.

Detail of Co-ordinates (lat-long) of all four corners of the proposed project site:
<table>
<tr><td>Latitude</td><td>Longitude</td></tr>
<tr><td>21°40’12.84” N</td><td>72°32’21.78”E</td></tr>
<tr><td>21°39’55.47”N</td><td>72°32’22.51”E</td></tr>
<tr><td>21°40’15.79”N</td><td>72°32’46.20”E</td></tr>
<tr><td>21°39’58.90”N</td><td>72°32’50.82”E</td></tr>
</table>
</td></tr>
<tr><td>Nature of Project</td><td>All works related to but not limited to 750 KTPA Propane De-Hydrogenation Unit (PDH), 500 KTPA Polypropylene unit (PP) and Ethane & Propane import, storage and transfer facilities at Dahej, in the state of Gujarat, India.</td></tr>
<tr><td>Insured Property</td><td>All materials, equipment, supplies, Plant & Machinery, goods, consumables, any free issue materials, spare parts and materials in transit forming part or intending to form part of the Project, whether located on-site or at off-site storage, fabrication yards, vendor/manufacturer premises or in transit, including but not limited to temporary works / structures, temporary civil works including project office buildings, site facilities, site roads, lighting , fencing, construction power, enabling works and amenities, common facilities, improvements, tie-ins, connections and additions/modifications to existing facilities, pipelines, storage sheds, tanks, spheres, fabrication/storage yard including all equipment, power Infra, Security, IT infrastructure, instrumentation, automation and control systems, material awaiting erection or installation and all other property collectively forming part of or intended to form part of the Project.</td></tr>
</table>

2. Sum Insured

A. **Marine Open Cover**:

Description	**Amount in INR(incl. taxes)**
Imported Supplies	2,868 Cr
Indigenous Supplies	7,261 Cr
Total Sum Insured	10,129 Cr

Per Bottom Limit: INR 250 Crore

B. **Section-I- Construction/Erection All Cover**: INR 18,582 Cr
Section-II- Third Party Liabilities Cover: INR 25 Crore for any one accident and INR 50 Crore in aggregate.

3. DEDUCTIBLES

A.	**Marine Open Cover Excess:**	0.25% of the consignment value subject to minimum of INR 1,00,000/-for each and every claim.
B.	**Section – I - Erection "All Risks" Excess:**	• **Excess for AOG** – 10 % of the claim amount subject to a minimum of INR 5 Crore (i.e. Acts of God perils like storm, tempest, flood, water damage, subsidence, collapse and earthquake). • **For Testing & Commissioning Claims including Fire and Explosion during Testing and Commissioning Period/ Fire & Explosion/ Maintenance / Design Defect** - 10% of claim amount subject to minimum of INR 5 Crore for each and every loss. • **All other Perils** - 5% of claim amount subject to minimum of INR 2.5 Crore for each and every loss.
	Section – II -Third Party Liability Excess:	Death/ Bodily Injury - Nil. Property loss/damage – 5% of claim subject to minimum of INR 10 lacs for eel.

4. PREMIUM

5. INSTALLMENT SCHEDULE

6. A: MARINE OPEN COVER

Marine cargo insurance for all Goods, Plant & Machinery, Equipment, Materials, Consumables and free-issue materials etc. intended to form part of the Project, including items sent back and forth for repair/rectification/fabrication/testing, in transit from anywhere in the world to anywhere in the world, on a 'warehouse to warehouse' basis against loss or damage arising from customary 'all-risks' perils (including war, strikes, riot and civil commotion) while in transit by any conveyances and/or vessels and/or air and/or barge and/or road and/or rail and/or any other conveyance by land, sea or air and connections, including during loading, unloading and temporary storage, up to full replacement value of such Goods, Plant & Machinery, Equipment, Materials, Consumables and free-issue materials etc.

Coverage shall also include the movement of damaged Plant & Machinery and Equipment etc. sent back and forth for repair/rectification/fabrication/testing (from project site/fabrication yard to vendor's site and back to project site/fabrication yard).

Coverage shall further include the movement of project Goods/Materials/Plant & Machinery etc. from fabrication/storage yard to project site and vice versa.

Basis of Valuation:

1. **For Imported Supplies:** Costs, insurance, freight charges, loading and unloading charges, survey charges, duties and taxes (including Customs Duties) plus 10%, plus anticipated future escalation of 20%.
2. **For Indigenous Supplies:** Costs, insurance, freight charges, loading and unloading charges, survey charges, duties and taxes (including GST) plus 10%, plus anticipated future escalation of 20%.
3. **Second-hand and used items:** Market value for a similar item in equivalent condition immediately prior to transit + GST (at actual).
4. **Return:** Invoice Value + 10%.
5. **Machineries moving to and from for repairs:** Invoice Value + Cost of Repairs including GST.

All valuations above shall be deemed to represent the replacement cost as new, unless otherwise stated (e.g., used equipment), and shall include all costs reasonably incurred for procurement, transportation, insurance, customs clearance, duties, taxes, surveys, and preparation for installation.

Subject Matter Insured:

Cargo and/or merchandise of every description incidental to the Insured's business and the Project and/or any other cargo where the Insured has insurable interest, consisting principally of, but not limited to:

- All Goods, Plant & Machinery, Equipment, Materials, Consumables, Stores and Spares to be installed as part of the Project, whether new or used
- All capital equipment, machinery (including over-dimensional cargo, cranes, engines, pumps, electronic/electrical/mechanical equipment's and spares), laboratory equipment and its spares, fragile and non-fragile goods (including glass, insulation, refractory items), structural materials, mild steel plates, control and remote operated valves, pipes, fittings, hardware and building materials (cement, packing materials, wrapping/coating materials)
- Bulk and break-bulk cargo, free samples, raw materials, hazardous and non-hazardous chemicals, catalysts (including spent catalysts), adhesives, temperature-sensitive cargo;
- Containers of any kind, materials procured on loan, goods held in trust or under custody/control of the Insured;
- Goods removed for repair, rectification, fabrication, testing, renovation or job work and returning to the project site;
- Goods/materials moving between storage/fabrication yards, vendor premises, ports, warehouses and the Project site;
- All other goods for which the Insured is required to insure, or authorized/instructed to insure, or which may otherwise be at their risk and/or for which they may be legally liable, or which are incidental to the performance of the Project.

The above shall include all such goods in transit by any mode (road, rail, sea, air, barge, inland waterways) from anywhere in the world to anywhere in the world on a warehouse-to-warehouse basis, including loading, unloading, transshipment, temporary storage and associated handling risks.

Storage Period:

The cover shall include the risk of loading, unloading and handling during transit at all points and temporary storage during the ordinary course of transit at all locations. The risk of storage during transit is held covered in accordance with the Duration Clause of ICC A/ ITC A/ ICC(Air), but extended to allow up to 60 days additional storage beyond the standard duration, automatically, without prior declaration or additional premium.

Any intentional storage/ or storage beyond this period of 60 days after expiry of the respective ICC(A)/ITC (A)/ICC(Air) duration periods, shall be held covered subject to prior notice to insurers and agreement on additional terms and conditions if applicable.

For the avoidance of doubt, cover will remain uninterrupted for storage at intermediate locations deemed part of transit as per Institute Cargo clauses, provided that storage is incidental to the transit.

Packing:

It is understood and agreed that packing shall be in accordance with standard and customary practices for the type of goods insured and the mode of transit, including loose, bulk, and break bulk shipments where customary.

For the purpose of this insurance, packing shall be deemed acceptable if it conforms to:

- the manufacturer's standard packing, or
- the customary practice of the trade or carriage mode, unless otherwise agreed.

Voyage/Transit Details:

From anywhere in the World to anywhere in the World on a warehouse-to-warehouse basis, including but not limited to:

- Imports, Exports, Domestic Purchase, Inter Unit Transfers, /Depot transfers
- Purchase Returns,
- High Sea Sales/High Seas Purchases,
- Movements to & fro to Job Workers/ Loan License Manufacturers/Third Party Manufacturers,
- Movements of Cargo to & fro for repairs, rectification, fabrication, testing.
- Movement of Plant & Machineries between the assured premises/units/Plants/fabrication yards,
- Mercantile Trade Shipments,
- All kind of transhipments including Multi Modal transhipments,
- Movement of the containers/Reefer Containers/ISO Tanks (loaded and empty) within India or Internationally
- Any other movements for which the Assured has an insurable interest, assumes contractual or legal responsibility, or may be authorized or instructed to insure/or which maybe otherwise at their risk.

Cover shall include transits by sea, air, road, rail, inland waterways, coastal vessels, barges, and multimodal transport, including all customary transshipment and storage incidental to the voyage.

Mode of Transit

Rail and/or Road and/or Sea and/or Air conveyance and/or Inland waterways and/or coastal vessels and./or barges and/or Courier and/or Parcel Post and/or Personal Carriage and/or own transport arranged by the insured and/or hand baggage by employees or authorized representatives of the insured in connection with insured's business activities, whether under contract of affreightment or not.

Cover shall apply irrespective of whether the transport is performed under bill of lading, airway bill, consignment note, or informal arrangements.

Terms of Cover: All Risk and War & SRCC Cover

1. Institute Cargo Clauses "A" CL382 dated 1st January 2009

2. Institute War Clauses (Cargo) CL385 dated 1st January 2009
3. Institute Strikes Clauses (Cargo) CL386 dated 1st January 2009
4. Institute Cargo Clauses (Air) CL387 dated 1st January 2009
5. Institute Strikes Clauses (Air Cargo) CL389 dated 1st January 2009
6. Institute War Clauses (Air Cargo) CL388 dated 1st January 2009
7. Institute War Clauses (Sendings by Post) CL390 dated 1st March 2009
8. Institute Replacement Clause dated 1st December 2008
9. Institute Classification Clause CLS354 dated 1/1/01 to apply to ocean going vessels over 25 years of age, but additional premiums, if any, to be calculated in accordance with agreed scale.
10. Termination of Transit Clause (Terrorism) 2009 JC 2009/056 dated 1st January, 2009
11. Marine Cyber Endorsement
12. Inland Transit (Inland Vessels) Clause – A
13. Inland Transit (Rail or Road) Clause – A
14. ITC Clause B for tail end risk
15. Inland SRCC Clause
16. Cargo termination of storage in transit clause.
17. Concealed Damage Clause (90 days).
18. Extension under Duration clause at port of discharge is required upto 60 days.
19. Risk of loading & unloading is covered.
20. Paramount War Clause
21. In case of Dual Insurance wherein the Equipment's and Materials etc. are covered by the Seller/Contractor/Sub-Contractor etc. Policy and also insured under this Policy, the Primary Liability in such cases to pay claims shall be of the Insurer issuing this policy. This policy is primary and non- contributory.
22. Container Claims Clause
23. Container Cover Clause
24. Registered Post Parcel Clause duly amended for Courier
25. Replacement Clause (Second hand Machinery)
26. Cargo ISM Endorsement
27. FOB Clause – 30 days
28. Sorting Charges
29. Buyer's Interest Clause
30. Contingent Duty Clause
31. Notional Duty Clause
32. Shut Out Clause – 30 days
33. Deliberate Damage Pollution hazard Clause
34. General Average Clause
35. Forwarding Charges Clause
36. Payment on Account Clause – 75% of the assessed amount in case of net claims exceeding Rs. 10 lacs
37. Shortage of Container (including LCL shipments)/ Other Mode of Conveyance
38. Container, Trailer or Railcar Demurrage Charges clause
39. Delay Caused by GA for Temperature Controlled Cargo Brands Clause
40. Contamination and/ or Fumigation Clause
41. Repacking Clause
42. Debris Removal Clause/ Salvage Disposal/ Salvage Incineration/ Destruction Cost
43. Letter of Credit Clause
44. Non Standard Claim Settlement – 90 % of the Assessed Claim Amount
45. Express/ Emergency Freight clause
46. Returned Shipments (OEM Packaging: ICC A/ ITC A; Rest: ICC B/ ITC B)

47. Proof of Loss
48. Wilful Misconduct Clause
49. Claused Bill of Lading
50. Errors & Omissions Clause
51. Knowledge of Occurrence Clause
52. Innocent Assured Clause
53. Pair & Set Clause
54. Missing Goods Clause – 90 days
55. Deviation Clause
56. Bulk Solvents
57. Goods Subject to loss Clause
58. Air Freight Replacement Clause
59. Acceptance of Documents clause
60. Attachment and termination of Risk Clause
61. Shipment Clause
62. Customs Duty Insurance Clause
63. Multi Transit Clause
64. Limitation of Liability clause to be waived in respect of movement of the cargo by assured's own road vehicle/Private Carrier where no LR is issued.
65. Waiver of Recovery Rights/Subrogation for claims upto INR10,00,000/-
66. Waiver of FIR in respect of claims upto INR 10,00,000/- for losses occurring due to theft/Pilferage/Non-Delivery/Shortage/Accident
67. Self-Survey Limit of INR 10,00,000/-
68. Cargo Accumulation Clause
69. Non-Marine Exclusion Clause
70. Political Risk, Financial Guarantee and Credit Risk Exclusion Clause,
71. Additional Custom Duty Clause
72. Escalation Clause – 20%
73. Control of damaged goods clause
74. Forwarding expenses clause
75. Fragile items covered on All Risk Basis
76. Unseaworthiness and unfitness clause admitted
77. Sue & Labour / Loss minimization expenses
78. Extension of cover in respect of damaged interests
79. Cargo ISM Forwarding Charges Clause (at no additional premium) JC 98/023
80. Transshipment Clause
81. Label Clause

Warranties, Other Clauses & Exclusions

1. Communicable Disease Exclusion
2. Over Dimensional Cargo Survey Warranty
3. Excluding shipments from Cuba, North Korea, Syria, Iran and Crimea absolutely.
4. Excluding Shipments to/from and within Ukraine, Russia, Belarus, Ukrainian territorial waters and Russian territorial waters in the Black Sea and the Sea of Azov.
5. War & SRCC cover for all transits whilst the conveyance carrying the interest insured herein is within the HRA as per the latest listed areas in the JWLA (currently JWLA-032) unless specifically agreed by the insurers and additional premium has been paid by the Assured.
6. 50:50 Clause with EAR Policy.
7. Sanction Limitation and Exclusion Clause

8. Five Powers War Exclusion (Amended to Include Triggering of NATO Agreement)
9. Israel &/Or the State of Palestine &/Or Lebanon Condition
10. Institute Cyber Attack Exclusion Clause CL380 dated 10th November 2003
11. Institute Radioactive Contamination, Chemical, Biological, Bio-Chemical and Electromagnetic Weapons Exclusion Clause CL370 dated 10th November 2003

Cancellation of Policy

Policy will not be cancelled or allowed to expire without a written notice to all parties at least sixty (60) days in advance, except in respect of marine cargo insurance where in the case of war, strikes, riots and civil commotion risks insurance may be cancelled by giving seven (7) days' notice to the Insured but forty-eight (48) hours in respect of strikes, riots and civil commotion risks in respect of sending's to or from the United States of America. Cancellation shall become effective on the expiry of the appropriate number of days from midnight of the day on which notice of cancellation is issued by or to the Insurers but shall not apply to any transit insurance that shall have been declared or attached in accordance with contract terms and conditions before the cancellation becomes effective.

Limit per Bottom: Single Shipment limit
(Import)is INR 250 crore (or its equivalent in any other currency)
(For Inland Supply): INR 250 crore (or its equivalent in any other currency).
In case of increase in exchange rate or taxes & duties, the PBL shall be revised upwards during the policy period.
For consignment value more than specified above, the rates shall be mutually agreed.
Limit Per Location Clause: Not withstanding anything to the contrary contained in this contract, underwriters liability in respect of any one accident or series of accidents arising from the same event in any one location shall not exceed the limit per location amount stated herein i.e. Rs.500 crore.

B: Section – I - Erection All Risks Cover
Section – II - Third Party Liability including Cross Liability

Risk Cover:

The risk coverage under the policy shall commence from the earliest of the following events:

- Upon unloading of goods/consignments at the site of erection/fabrication yard; or
- Start of civil works; or
- Policy start date as notified by PLL

Cover shall remain in force throughout the entire project duration, including during transportation of items/ dismantled items to and fro vendor's work including all risk in course of repair/ reconditioning work at vendor's workshop, transportation from vendor's and supplier's work and warehouse to intermediate site, site stores, handling, shifting, storage at intermediate location of goods/consignments, pre-assembly for the purpose of design, erection, testing and commissioning and until completion of Design, Erection, Testing, all other pre commissioning activities of the plant, Commissioning and Trial Operation of all connected systems in respect of Plant & Machinery covered and commissioning and maintenance period thereafter. The risk coverage under the policy to include any loss or damage caused to the insured property due to any accident in insured property. The risk coverage shall continue till successful commissioning/testing of the project, up to the stabilized load at which the plant is taken over by the principal so that same facilities will be migrated to Mega Policy of PLL. This is to ensure that at no point of time the facility/facilities

remain uninsured.

Insurers hereon explicitly note and agree than this policy is a seamless project insurance policy which will cover all construction/erection/testing/commissioning/ operational and maintenance activities of the entire project works whether in progress, tested, handed over, partially handed over, commissioned/being used etc. and will continue to provide cover on an all risk basis (and not just limited to construction/erection activities) together with all the extensions and add on covers agreed and the cover continues seamlessly until the later of either the final commercial operation date of the entire plant being achieved or until the policy expiry period or any extensions thereof as may be agreed.

Scope of Cover:

All contracts with respect to Project of the Insured attaching during the period of insurance and shall include, but not be limited to, the following:

1. Storage, Design, Erection, testing and commissioning charges including SCE Insurance, including supervision and other incidental services by vendors
2. Testing period (for each unit and Integrated Testing of the overall system)
3. Temporary civil works including project office building, storage sheds, storage yard and associated temporary structures.
4. Project office building, associated equipment, furnishings and fixtures etc.
5. Enabling facilities like temporary roads, temporary lighting, construction power distribution network and construction water systems etc.
6. Permanent civil works such as buildings, foundations, earthwork and associated materials for construction thereon.
7. Cost of material handling at site
8. Cost of contingencies including expenses for foreign experts at site in connection with damage/loss affecting associated plants/facilities.
9. Supervision charges
10. Cost of lubricants, consumables and similar materials required for erection and commissioning.
11. Miscellaneous erection and testing expenses
12. Early works cover for activities undertaken prior to full contract effectiveness where materials form part of the Project
13. Catalysts, including Spent Catalysts
14. Contractor's Charges including Contractor's Overheads, supervision costs and incidental expenses.

The above shall include all materials, items, works and associated costs forming part of the declared value of the Project, whether awaiting erection, under erection, pre-tested, tested, commissioned, temporarily handed over, partially handed over, or used, and all activities incidental to the successful completion of erection, testing, commissioning and stabilization at design load.

Commissioning/Testing Period Cover:

1. Commissioning/Testing period available under the policy shall cease to operate with the commencement of the commercial production. Generally, testing period shall be for a period of 4 (four) months & it starts with the commencement of startup activities which involves all activities required to be performed after pre- commissioning and prior to trial operation.

2. All activities till Erection of complete plant and prior to start up activities shall be treated as Pre- commissioning activities and shall continue under the erection cover. Pre-commissioning activities shall include all activities required to be performed after final tests for all units, offsite, utilities contained within plant, equipment and machineries comprised within the plant to bring the equipment covered in units from an inactive condition to a state ready for trial run and shall include but not limited to checking of systems and vessels, flushing and steam blowing, air blowing of pipelines, system leak checking up to specified pressure, purging the system using inert gas, checking of total instrumentation system of the plant, checking of electrical equipment from proper earthing, installation of resistance conducting operability tests on individual equipment, vessels and systems, integration of all control systems of the unit with the control system of the Project and LNG Terminal and all other activities required to be performed before commissioning and trial run of the unit.
3. Testing would be deemed to have commenced from the date the plant is ready for trial run. Testing involves introduction of hydrocarbon and Equipment/Plant/Unit is tested upto 100% of design Criteria maintained by each separate unit in a stable and controlled manner for a continuous ongoing period of minimum 72 hours (N.B.- Design Criteria are the plant design specification as stipulated in the project design basis.) and will continue till commissioning of the unit. "Commissioning" means pressing in to service the unit(s), equipment (s), Vessels, pipelines(s) machinery and systems and sub systems comprised within the plant in accordance with procedures as approved in Plant Specific Operating Manual and as per the requirement of the Process Licensor, which is the subject matter of the contract after successful testing and trial run of the Plant. In case the commissioning could not be achieved up to the expiry of testing period, the same shall be extended on payment of additional premium as per mutually agreed rates.
4. Testing will also involve part of the existing plant and machineries from the operational unit with an integration to the newly erected plant and such P&M will be involved in integrated testing and commissioning activities. This policy covers such P&M of the operational plant which are involved in testing/ integrated testing phase of new plant, and are covered in respect of any loss or damage occurring during the project and defect liability period for any damage arising out to erection , commissioning and testing work.

   If testing period is suspended after commencement of test run for any reason whatsoever, any period during which the test run remained suspended shall be treated as erection period. However, the testing period shall remain reduced by actual duration of testing already carried out in the initial test run. The minimum testing period is one day.
6. In case the plant is under shut down for attending commissioning problems, the period of shut down will be considered as Erection Period. The testing period available for the plant on restart would be for a duration equivalent to the testing period endorsed to the policy initially less the number of days the plant has already run on test / trial mode. Note: Taking a turbine on barring gear shall be treated as erection period. Any similar activity for other plants in the process of shutdown, shall be treated as period of erection and not a period of testing
7. Testing period will be applicable for each unit and integrated testing of plants/units.

INTEREST:

Section I – Erection All Risk/Storage cum Erection "All Risks"

All risk coverage encompassing and including but not limited to the storage, construction, erection/contract works, testing phases, stocks and supplies of every description and nature,

all real and personal property of every kind, nature and description forming part of/intending to form part of the project, belonging to the Principal Insured (Beneficiary) /contractors/subcontractors of all tiers or for which they are responsible to insure and/or in which the said entities have an insurable interest or property of others in the Insured's care, custody or control or which the Insured entities have agreed to insure prior to loss or damage and all other and such property in which the insured may acquire insurable interest during the course of erection during the policy period. Covering physical loss or damage to the Facilities or part thereof at the site, with an extended maintenance coverage in respect of any loss or damage occurring during the project and defect liability period while the Contractor/sub-contractor is on the site for the purpose of performing its obligations during such period.

The Insurer will also reimburse the Insured for the cost of clearance and removal of debris following upon any event giving rise to an admissible claim under this policy but not exceeding in all the sum (if any) set opposite thereto in the Schedule.

Section II – Third Party Liability including Cross Liability

The Insurer will indemnify the Insured against –

a) Legal liability for accidental loss or damage caused to property of other persons including property held in trust by or under custody of the Insured for which he is responsible excluding any such property used in connection with erection thereon;
b) Legal liability (liability under contract excepted) for fatal or non-fatal injury to any person other than the Insured's own employees or workman or employees of the owner of the works or premises or other firms connected with any other erection work thereon, or members of the Insured's family or of any of the aforesaid; directly consequent upon or solely due to the erection of any property described in the Schedule.
c) Provided that the total liability of the Insurer during the period of Insurance under this clause shall not exceed the limits of Indemnity set opposite thereto in the Schedule.
d) In respect of a claim for compensation to which the indemnity provided herein applies, the Insurer will, in addition, indemnify the Insured against –
   i. all cost and expenses of litigation recovered by any claimant from the Insured, and
   ii. all costs and expenses incurred with the written consent of the Company. The exclusion i.e. War & Terrorism, Sanctions, Limitations and Exclusion Clause, Political Risks Exclusion Clause shall apply to this Section also.

TERRITORIAL LIMITS: Anywhere in India in connection with the Contract

ADD-ON COVERS / CLAUSES & CONDITIONS:
Section I and II

Construction/Erection All Risks Policy plus endorsements:

Sr No.	Description	Sub-Limits
1.	Cover for loss or damage due to SRCC/RSMD.	Full Limits
2.	Continuity of cover during operational phase for Unit/Plant tested but awaiting integral testing (along with other units/Plants)	Upto 6 Months. All units to remain under project policy till commissioning of the entire complex.

Sr No.	Description	Sub-Limits
3.	Extended Maintenance (Extended Defects Liability Clause) for Plant & Machinery	24 Months After completion of Testing Period
4.	Maintenance Visit (Limited Defects Liability Clause) for Civil Works	12 Months After completion of Testing Period
5.	Expediting Costs - Cover of extra charges for Overtime, Night Work, Work on Public Holidays and Express Freight including Air Freight	Upto 30% of net claim amount.
6.	Inland Transit to & from off-site storage / vendors/manufacturer premises	Rs. 500 Crore AOA and Full Limit in aggregate.
7.	50:50 Clause	
8.	Offsite storage, Fabrication and / or modification and / or any work related to project at any site (including manufacturing) and respective transits involved.	Rs. 500 Crore AOA at each location & Full Limit in aggregate.
9.	Free Automatic Reinstatement	Upto 25% of sum insured
10.	Escalation	Upto 30%
11.	Professional Fees Clause (To Include Architects, Surveyor & Consulting Engineers Fees or other Professional Fees including Foreign experts visit)	Rs. 75 Crore AOA & Full Limit in aggregate.
12.	Clearance and Removal of debris including removal and disposal of debris, and material foreign / external to the works, desilting & dewatering the works - Per Occurrence.	Rs.100 Crore AOA
13.	Loss Minimization Expenses	Rs. 50 Crore AOA
14.	Firefighting facilities and fire safety at construction sites	At Actuals
15.	Fire fighting expenses	At Actuals
16.	Owners Surrounding Property with FLEXA including during extended maintenance cover.	Upto 50% of Policy Sum Insured but with FLEXA risks
17.	Pro-rata extension of policy period	Extension of the policy for up to 12 months on pro-rata basis irrespective of the claim ratio. Beyond that it will be pro-rata if claim ratio is below 50% and will be mutually agreed if claim ratio is above 50%.
18.	Coverage for Earthquake incl. Tsunami	Full Sum Insured
19.	Coverage for Loss, destruction or damage directly caused by Storm, Cyclone, Typhoon, Tempest, Hurricane, Tornado, Flood or Inundation incl. hailstorm and or any other act of God peril.	Full Sum Insured
20.	Waiver of Subrogation	Agreed
21.	72 hours clause	Covered
22.	Waiver of Contribution	Agreed

Sr No.	Description	Sub-Limits
23.	Design Defect Cover - DE-3 for Civil Works and DE-4 for Electromechanical/ Hydro mechanical, P&M Works	Covered
24.	Multiple Insured Clause	Covered
25.	Additional Custom Duty	Upto INR 250 Cr
26.	Cover for Catalyst	INR 500 Crore AOA
27.	Hydrocarbon Endorsement For Testing & Commissioning	wording as per MR 204 for Hydrocarbon Processing Industries 1 and MR 205 for Hydrocarbon Processing Industries 2 Cover for catalyst during hot testing - INR 500 Crore AOA.
28.	Civil Engineering Works: a) All permanent Civil Engineering Works, b) All Types of temporary works (On Site and Offsite) including Temporary Structure, Site Office, Stores, Godown, Workshop etc., Site Facilities, and Amenities for Labour, worker's camp, warehouses of the Project, Safety & QA / QC Lab / Facilities, P & M and Electrical Infrastructure Works & Other Etc. until the end of usage of such Temporary Facilities provided included in Contract Price while the contract was awarded by the Owner.	Value of Civil Works included in Sum insured. Temporary Works – Rs. 100 Cr.
29.	Camps and Stores Cover	Rs. 25 Crore AOA
30.	Cover Of Leak Search Costs When Laying Pipelines -	Rs. 50 Crore AOA
31.	Construction Machinery Plants And Equipment's -	Rs. 50 Crore AOA
32.	Loss-Payee Clause	
33.	Valuable Papers and Records and Restoration of records/ Plans/ Documents etc.	Rs. 25 Crore AOA
34.	Public Authorities Clause	Upto INR 75 Crore
35.	Free Issue Materials Clause	At Actuals
36.	Non - Vitiation Clause	Covered
37.	Leased Equipment	Rs. 50 Crore AOA
38.	Temporary Repairs	At Actuals
39.	Put to Use	Project Sum Insured and 6 Months
40.	Refund Of Premium for Early Completion of The Project -	Pro-rata on Monthly Basis
41.	Refund of Premium for cancellation of Policy	Pro-rata on Monthly Basis
42.	Endorsement Concerning Storage	Value per storage unit not exceeding the equivalent of Rs. 500 Cr
43.	Claim preparation cost	Rs.10 Crore AOA
44.	Nominated loss adjusters / surveyors clause	As per Annexure - A

Sr No.	Description	Sub-Limits
45.	On Account Payment clause	Upto 75% of initial estimated value of loss
46.	Errors & Omission Clause: It is understood and agreed upon that any accidental error or omission in the description of the covered property shall not prejudice the Insured's interest.	
47.	Coverage for risks of pollution, contamination and seepage	Rs.100 Crore AOA
48.	Cut Through Clause (if applicable)	
49.	Policy Non-cancellable – other than non-payment of premium	
50.	Fragile items like glass, insulation, refractory, insulators etc. as may be due to peril insured	At Actuals
51.	Cover for Property belonging to or held in care, custody or control of the insured	At Actuals
52.	Cessation of Work Clause	Upto 90 Days any one year and 180 days overall policy period
53.	Primary and Non-contributory Clause	Covered
54.	Instalment clause	Yearly instalments
55.	MR 208 Underground cables and pipes	
56.	Environmental Clean-up Cost Cover	Rs. 75 Crore AOA
57.	Vibration Removal & Weakening Support	Limit within overall TPL limits
58.	Destruction Of Undamaged Insured Property	INR 100 Crore AOA
59.	Piling Foundation & Retaining Wall Works Endorsement	Covered
60.	Cover for decontamination	INR 25 Cr AOA
61.	Removal to Place of Safety	
62.	Work away Repairs	
63.	Extended Expiration clause	
64.	Theft and Burglary	Waiver for FIR upto Rs. 1 Cr over and above deductible
65.	Crane hiring charges	Rs. 25 Cr AOA
66.	Coverage for any feed stock, raw material, stock in process to be used for testing and commissioning procedure	Rs. 250 Cr AOA. For Catalysts it is Rs. 500 Cr AOA.
67.	Immediate Repair clause	
68.	Breakage of Glass	
69.	No Control clause	
70.	Agreed Bank Clause	
71.	Loss payee clause	
72.	Suspension of testing period clause	
73.	Intermittent testing cover:	It is noted and agreed that testing may not be continuous, and any suspension of testing period will not reduce the testing period and shall be considered under erection period. The aggregate

Sr No.	Description	Sub-Limits
		period of any intermittent testing shall not exceed the testing period stated under the period of insurance in the RFQ/ policy schedule
74.	Repeat tests/trails cover:	The policy to extend to provide indemnity for the cost of any repeated and/or subsequent tests and/or trials necessarily carried out as a result of Damage to the insured property
75.	Non-Invalidation Clause	
76.	Waiver of Betterment Clause	
77.	Partial Occupancy Clause	
78.	Basis of Claim Settlement on Reinstatement Value basis	Covered

General Exclusions:

1. Institute Radioactive Contamination, Chemical, Biological, Bio-Chemical and Electromagnetic Weapons Exclusion Clause
2. War & Terrorism Exclusion
3. Nuclear Energy Exclusion Clause
4. Sanctions and limitation clause (LMA 3100)
5. Communicable Disease Exclusion
6. Exclusions of crops, Forests and Cultures
7. Cyber Attack Exclusion Clause
8. Political Risks Exclusion Clause
9. Total Asbestos Exclusion Clause
10. Exclusion of ALOP

Date of Proposal and Declaration : 01/11/2025

IN WITNESS WHEREOF, the undersigned being duly authorised has hereunto set his/her hand at LCB DELHI 500300 on this 18th day of November, 2025 .

For and On behalf of
United India Insurance Co. Ltd.

Affix Policy Stamp here.

GENERAL

CONDITIONS

OF

CONTRACT

FOR GOODS

1. DEFINITIONS

1.1 **"PLL" or "Owner"** shall mean Petronet LNG Limited, a Company incorporated in India and registered under the provisions of the Companies Act 1956, having its registered office at World Trade Centre, Babar Road, Barakhamba Lane, New Delhi – 110001.

1.2 **"Vendor" or "Seller" or "Supplier"** shall mean the Contractor / bidder / tenderer selected for carrying out the stated work as per the terms and conditions of this tender document and shall include its successors and permitted assigns.

1.3 **"Contract" or "Purchase Order"** shall mean Letter of Award / Acceptance which defines the scope of the engagement and the Goods to be delivered by the Vendor as well as the price schedule for the said Goods and all attached exhibit(s) and document(s) referred to therein along with all the terms & conditions mentioned therein together with all and any subsequent modification(s) thereto.

1.4 **"Contract Price"** shall mean the price payable to the Vendor under the Contract for the full and proper performance of his contractual obligations.

1.5 **"Vendor's / Seller's / Supplier's Representative"** means the person appointed from time to time by the Vendor for execution of the Contract.

1.6 **"Goods"** shall mean articles, materials, equipment, design and drawings, data and other tangible or intangible property to be supplied by Seller to complete the contract.

1.7 **"Officer in Charge" (OIC) or "Engineer in Charge" (EIC)** shall mean the Officer / Engineer for the time being nominated by the Owner and specified in the respective Purchase Order.

1.8 **"Site"** shall mean the site location of as defined in the Tender document, where the supply of goods are required to be effected.

2A MISCELLENEOUS PROVISIONS:

i. Notwithstanding the subdivision of the document into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

ii. Wherever any portion of the Instructions to the Bidder is repugnant of or at variance with any Conditions of Contract, then the provisions of the Conditions of Contract shall be deemed to override the provisions of the Instructions to Bidders and shall prevail to the extent of such repugnance or variations.

iii. Wherever it is mentioned in the Tender Documents that the Vendor shall perform certain work or provide certain facilities, it is understood that the Vendor shall do so at his own risk and cost, being deemed to be part of the relevant items in the Schedule of Rates whether expressly stated or not.

2B INTERPRETATIONS & PRIORITY OF CONTRACT DOCUMENTS

i. Once the contract is confirmed and signed, the terms and conditions contained therein shall take precedence over the Vendor bid and all previous correspondence/s if any. The documents forming the Contract are to be read together and interpreted as mutually explanatory of one another (to the extent available in the Tender document / Contract). If there is a direct inconsistency in specific obligation(s), then for the purposes of interpretation, and unless otherwise provided in the Contract, the priority of the Contract documents shall be in following order:

a. The Contract Agreement (wherever applicable)
b. Letter of Acceptance along with its enclosures
c. Scope of Works/ Job Specifications (specific to particular job only, wherever provided)
d. Special Conditions of Contract (SCC)
e. Technical Specifications (wherever applicable)
f. General Conditions of Contract (GCC)
g. Instructions to Bidders (ITB)
h. Other Documents, if any.

ii. Words importing the singular number include the plural and vice versa and words importing gender include the masculine, feminine and neuter genders. Unless the context otherwise requires, any reference to a "party" herein is a reference to a party hereto.

3. GENERAL OBLIGATIONS OF THE VENDOR

3.1 The Vendor shall, in accordance with and subject to the terms and conditions of this Contract, supply the Goods in accordance with the Scope of Work / Specifications of the Contract and carry out its obligations with all due diligence, professional skills, care and efficiency in accordance with generally accepted professional techniques and practices.

3.2 The Vendor shall observe sound management practices and employ appropriate advance technology and safe methods while procuring and supplying the Goods that shall be fit for the purpose for which the same are intended and as specifically provided under the Contract.

3.3 The Vendor shall be liable for the stamp duty or any other payments legally payable in respect of this contract as per applicable laws.

4. VENDOR's REPRESENTATIVE & PERSONNEL

4.1. Vendor shall nominate a person (*"Vendor's Representative"*) who shall be responsible for and authorized to represent it at all times during the term of the Contract and to receive and to act on any request made by PLL or its representative in performance of any obligations as per the terms of this Contract.

4.2. PLL shall be at liberty to object to any nomination in respect to clause 4.1 and may require Vendor to replace, immediately such person by a competent substitute, at no extra cost to PLL.

4.3. The Vendor's Representative shall take instructions from OIC for the proper coordination and timely performance of obligations under the terms of the Contract.

4.4. The Vendor's Representative shall have to be duly authorized by the Contractor to act or take decision as and when required, on behalf of Vendor under the Contract.

5. CONFIDENTIALITY

5.1 The Vendor shall treat all matters, communications, instructions given during the term and in relation to the Contract , strictly confidential and undertakes not to disclose, any information, documents, technical data, experience and know-how shared/exchanged /given to him without the prior written permission of PLL.

5.2 The Vendor further undertakes to limit the disclosure/access to the confidential information as mentioned above, only to those of its employees, Implementation Partners etc. who reasonably requires the same for the proper performance of the Contract, provided however that the Vendor shall ensure that each of employees/ Implementation Partner ,with whom the information has been shared , is informed of the confidential nature of the said information and obligations of its nondisclosure.

6. PERFORMANCE BANK GUARANTEE {Not Applicable for OEM & Proprietary Services and Contract Value less than INR 7 Lakhs (exclusive of GST)}

6.1 Successful bidder / Vendor shall submit Performance Bank Guarantee from a scheduled commercial bank as per format provided in the Tender document, for the amount equivalent to 10% of the total Contract Value (exclusive of taxes and duties) within 30 days from the date of placement of Purchase Order.

6.2 Performance Bank Guarantee shall be kept valid by the Vendor at his cost for 90 days from the last date of the term of the Contract and Warranty and shall be extended from time to time (if so required). It is specifically agreed that no interest shall be payable by PLL on the said Performance Bank Guarantee.

6.3 The Performance Bank Guarantee shall cover the entire Contract value including extra jobs / services if any. Further as long as the PBG submitted by Vendor, at the time of award of

the Contract, take care of the extra jobs / services, if any, executed and total executed value are within the awarded Contract price, there is no need for the Vendor to furnish an additional PBG. However in case the total executed value is or is likely to exceed the ceiling of awarded Contract Value, the Vendor shall furnish additional PBG equivalent to 10% of the exceeded value of the contract.

6.4 The Company shall have unqualified option under this guarantee to invoke the Performance Bank Guarantee for warranty and/or claim amount thereunder in the event of Vendor / Supplier failing any of the obligations entered into under this Contract or in respect of any amount due from the Vendor / Supplier to PLL.

6.5 Failure of the Vendor to comply with the requirements under this Clause for submission of PBG, of requisite amount, within 30 days of issuance of Purchase Order, shall constitute sufficient ground for the annulment of the award, the forfeiture of Bid security and to invoke any other legally permissible actions or remedies available to the PLL.

6.6 For itemised annual rate contract, if the duration of Contract is for more than one year, the Vendor shall provide, a PBG of amount equivalent to 10% of one year contract price, however the validity of the PBG under this clause shall be three months beyond Warranty Period or Contract Period whichever is later.

7. SUSPENSION OF THE PREFORMANCE OF THE CONTRACT

7.1 PLL may suspend, by giving an advance 15 days written notice (notice of suspension), in whole or in part (if possible) –performance of the contract by the Vendor at any time.

7.2 Vendor shall, after receipt of notice of suspension, suspend immediately the supplies of Goods and reduce the expenditure, if any, to a minimum level as agreed between the parties.

7.3 Upon suspension of the performance of supplies, the Vendor shall be entitled for the reimbursement of the costs which shall have been actually incurred prior to the date of such suspension. However, the total reimbursement shall be restricted to contract price.

7.4 By fifteen days prior notice, PLL may request the Vendor to resume the performance of the supplies, without any additional cost to PLL.

7.5 If the period of suspension of the supplies exceeds six months, either party shall be entitled to terminate the Contract according to clause 8 hereunder.

8. TERMINATION

(i) TERMINATION ON EXPIRY OF THE CONTRACT

This Contract shall be deemed to have been automatically terminated on the expiry of the term of the Contract , unless the same is terminated prior to the same in accordance with the other provisions of the contract and unless the Owner has exercised its option to extend this Contract in accordance with the relevant provisions, if any, of this Contract.

(ii) TERMINATION ON ACCOUNT OF FORCE MAJEURE

Either party shall have the right to terminate this Contract on account of Force Majeure, in accordance with clause no this General conditions of the Contract as set forth below.

(iii) TERMINATION ON ACCOUNT OF INSOLVENCY

In the event, the Vendor or its collaborator at any time during the term of this Contract becomes insolvent or makes a voluntary assignment of its assets for the benefit of creditors or is adjudged bankrupt by the court of competent jurisdiction, then the Owner shall be entitled to terminate this Contract , by giving a notice in writing, and all the rights and privileges of Vendor shall stand terminated with immediate effect after two (2) weeks of receipt of said notice by the Contractor / Vendor.

(iv) TERMINATION FOR UNSATISFACTORY PERFORMANCE

If the Owner considers that the performance of the Vendor is unsatisfactory or, is not in accordance with the terms of Contract, the Owner shall notify the Vendor in writing of its unsatisfactory performance along with the detailed reason thereof. The Owner shall then have the option to terminate this Contract by giving a 30 days written notice to the Vendor, if the Vendor fails to cure the reason for that unsatisfaction and /or comply with any requisitions contained in the said written notice given by the Owner.

(v) TERMINATION FOR CONVENIENCE

Notwithstanding anything contained in the Contract, the Owner may, by giving a 30 (Thirty) days written notice, terminate the Contract in whole or in part, if so desires.

In case of such termination, the obligation of the Owner to pay, shall be limited to the extent of price of Goods supplied by the Vendor and which has been duly received by the Owner, as per the provisions of the Contract, up to the date of notice of termination, subject to the Contactor complying with other provisions of the Contract.

(vi) CONSEQUENCES OF TERMINATION AND AMOUNT PAYABLE

In all cases of termination herein set forth, obligation of the Owner to pay, shall be limited to the extent of agreed price of Goods supplied by Vendor as per provision of the Contract up to the date of notice of termination, subject to the Vendor complying with other provisions of the Contract. Notwithstanding the termination of the Contract, the parties shall

continue to be bound by the provisions of this Contract that reasonably require some action or forbearance after such termination.

9. FORCE MAJEURE

In the event of either party being rendered unable by the events which are beyond the control of the party (Force Majeure events) to perform any obligation required to be performed under this Contract, the relative obligation of the party affected by such Force Majeure event shall be suspended, for the period during which such event lasts, subject to a maximum period of 60 days (it is for reference only and will be decided on the basis of duration of Contract), after which both the parties shall be entitled to terminate the Contract by giving not less than 15 days' written notice without any liability for termination.

Upon the occurrence of any such event(s) the party claiming the Force Majeure, shall notify the other party in writing as soon as practicably possible of the occurrence of such Force Majeure event and also the ending of the said Force Majeur event, in writing, not later than 72 hours of the occurrence / ending of the such event.

Force Majeure shall mean and include the following:

(a) War / Hostilities
(b) Riot or Civil Commotion
(c) Earthquake, Flood, Tempest, Lightning, Epidemic, Pandemic or Other Natural Disaster notified or not by the Govt authorities.
(d) Restrictions imposed by the Government or Other Statutory Bodies, which prevents or delays the execution of the order by the Vendor.
(e) Lawful Strikes and Lockouts.

10. PRICE REDUCTION SCHEDULE (PRS) {Not Applicable for OEM and Proprietary services and Contract Value less than INR 7 Lakhs (exclusive of GST)}

10.1 In case the Vendor fails to complete the Supplies of Goods within the stipulated period, then, unless such failure is due to Force Majeure event as defined in Clause herein above or due to established default by PLL or its employees, the total Value of Contract shall be reduced by ½ (half) % of the total Value of Contract per week of the period of delay or part thereof subject to a maximum of 5 (five) % of the total Value of Contract, by way of reduction in price for total period of delay.

10.2 The portion of supply completed in all respect which is being used for commercial operation shall not be considered for applying Price Reduction Schedule, if delivered within contractual delivery period.

10.3 The decision of the OIC with respect to applicability of Price Reduction Schedule shall be final and binding on the Vendor.

10.4 The Price Reduction will be calculated on the basis of total Value of Contract / executed Value of Contract (as the case may be) exclusive of taxes and duties.

10.5 As per clause 10.1 above, in case of delay in the execution of Contract the Vendor shall raise invoice for reduced value as per Price Reduction Clause. However, in case Vendor has raised the invoice for the full value of the contact, then Vendor shall issue a Credit Note towards the applicable Price Reduction amount.

10.6 In case Vendor fails to submit the invoice for reduced value or does not issue credit note as mentioned above, PLL will release the payment to Vendor after by reducing the amount after applying Price Reduction Schedule clause with corresponding reduction of taxes or PLL shall be at liberty to opt for Set-off, adjustment or deduction of the said amount along with applicable taxes, penalties, interest, if any, from any amount due for payment to the Vendor or security deposit, if any, lying with PLL, in future to the him under this contract.

10.7 In the event of any financial implication arises on PLL due to issuance of invoice without reduction in price or non-issuance of Credit Note, the same shall be to the account of Vendor and Vendor shall indemnify PLL to that effect.

11. MODIFICATION

During the performance of the Contract, OIC / PLL may make a change within the general scope of this Contract including, but not limited to, changes in methodology and minor additions to or deletions from the Work or with respect to technical and/or commercial aspects including terms of delivery and Vendor shall render the service as changed. Changes of this nature will be affected by a written order (i.e. Amendment) by the PLL. The time of completion of the said job may be extended for the part of the particular job at the discretion of OIC, for only such alterations or substitutions of the Works, as he may consider just and reasonable.

Issuance of acceptance or otherwise in such cases shall not be a ground for extension of agreed delivery date and also shall not affect the performance of contract in any manner except to the extent mutually agreed in writing between the parties , through an amendment of contract. PLL shall not be bound by any conditions or provisions in the Vendor's Bid Forms or acknowledgment of Contract, invoices, packing list and other documents which purport to impose any conditions at variance with or supplemental to the Contract.

Any modification of or addition to the contract shall not be binding unless mutually agreed and made in writing between both the parties.

12. COMPLIANCE OF LABOUR LAW CODES

The Vendor shall comply with all the relevant labour Laws/Codes/Regulations/ rules as amended upto date, applicable to the Vendor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration. The Vendor shall require its employees to obey all applicable Laws, including those concerning safety at work.

13. ASSIGNMENT / SUBLET

13.1 The Vendor shall not, save with previous written consent of the OIC or unless the same has been expressly specified in the Contract, sublet, transfer or assign the Contract or any obligations on the part of Vendor thereof or interest therein or benefit or advantage thereof in any manner whatsoever to any third party, without prior permission of PLL.

Provided, nevertheless, that any such permission given by PLL shall not relieve the Vendor from any obligation, duty or responsibility under the Contract.

13.2 This is pertinent to mention here that the basic scope of Contract cannot be sublet in any case. However, on specific request of the Vendor and subject to written permission of PLL, the Vendor may sublet the allied / incidental jobs related to the contract. Such permission shall not relieve the Vendor from any obligations, duty or responsibility under the Contract and Vendor shall be fully responsible for the same hereunder for the execution and performance of the Contract.

13.3 Sub-letting of entire Contract is specifically prohibited and an undertaking to this effect shall always be given by Vendor along with each invoice / bill.

14. NOTICE

14.1 **TO THE VENDOR:** Any notice to be given to the Vendor or his duly authorised representative under the terms of the Contract may be served by PLL by e-mail or through registered post / Courier at the address / contact information furnished by the Vendor. Proof of issue of any such notice shall be a conclusive evidence of the Vendor having been duly informed of all contents therein.

14.2 **TO PLL:** Any notice to be given to the OIC of the Owner under the terms of the Contract may be served by the Vendor, by e-mail or delivering the same through registered post / Courier at the respective site office.

14.3 A notice shall be effective when delivered or on the date mentioned in notice whichever is later.

15. INTELLECTUAL PROPERTY RIGHTS

The Vendor shall not, in supplying goods under this Contract, knowingly infringe or misappropriate any intellectual property right of a third party, and will take reasonable actions to avoid infringement. The Vendor shall protect , hold harmless , defend and indemnify PLL from and against any claim, lawsuit, or other proceeding, loss, cost, liability, or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a deliverable infringes any patent, copyright, trade secret, or other intellectual property right of any third party; or (ii) any third party claim arising out of the negligent or other tortious acts or omissions by the Vendor or its employees, subcontractors, or agents in connection with or related to the Vendor or the Vendor's performance under this Contract.

16. EXECUTION OF CONTRACT

All the Goods shall be supplied in strict conformity with the provisions of the Contract and with such explanatory detailed specification and instruction as may be furnished from time to time to the Vendor by OIC to the satisfaction of PLL and accept full responsibility for the satisfactory quality of such Goods supplied by them.

Any error in description and any omissions therefrom, shall not vitiate the Contract or release the Vendor from the execution of the whole or any part or any of his obligations under the Contract.

17. INSPECTION, TESTING & EXPEDITING

17.1. PLL or its representative shall have the right to inspect and / or test the goods to confirm their conformity to the contract specifications. The inspection & tests shall be conducted on the premises of the seller at the point of delivery and / or at the goods final destination. All reasonable facilities & assistance including access to drawings & production data shall be furnished by seller to PLL free of cost. PLL shall bear all the cost towards Boarding and lodging of PLL personnel visiting Seller's/ Vendor's premise of facility for inspection and expediting purpose.

17.2. Preliminary inspection at Seller's works shall not prejudice Purchaser's claim for rejection of the Goods on final inspection at Site or claims under warranty provisions.

17.3. If the Goods are not of specification or fails to perform specified duties or are otherwise not performing to the satisfaction of PLL, then PLL shall have the right to reject the Goods or parts thereof and ask for free replacement of the same within reasonable time failing which, PLL shall obtain the Good from some third party to fulfil its requirements at Seller's cost and risk.

17.4. Nothing in this clause shall be deemed to deprive PLL and/or affect any of its rights under the Contract which it may otherwise have in respect of such defects or deficiencies or in any way relieve the Vendor of his obligations under the Contract.

17.5. Goods rejected by the Purchaser shall be removed by the Seller at his own cost within 14 days (in case of dangerous, infected, corrosion-prone and perishable materials within 8 hours) of notice after repaying the amounts received against the supply. PLL shall in no way be responsible for any deterioration of or damage to the Goods under any circumstances whatsoever.

In case of rejection of Goods, Purchaser shall have the right to recover the amounts, if any, from any of Seller's invoices pending with Purchaser or by alternative method(s). The Purchaser shall also be entitled to recover handling and storage charges for the said period, during which rejected materials are not removed by the Vendor @ 5% of the value of materials for each month or part of a month till the rejected materials are finally disposed off.

18. TRANSIT RISK INSURANCE

i. All equipment(s) / material(s) shall be insured by Vendor for all transit risks up to unloading at PLL site unless specified otherwise in the Purchase Order, to cover the damages during the transportation and handling of Goods.

ii. Any damage during the transportation shall be immediately notified by PLL to Vendor as well as the transporter on receipt of goods, for further necessary action for recovery of transit damages.

19. TRANSPORTATION

i. Unless specifically specified in the Tender document, the Vendor shall supply the Goods on Carriage and Insurance Paid (CIP) / Delivered at (DAP) basis.

ii. Where the Vendor is required under the Contract to deliver the Goods on the other modes of delivery viz. Freight on Board (FOB) / Free Carrier (FCA) / Free Alongside (FAS) / Cost and Freight (CFR) / Cost, Insurance and Freight (CIF) / Delivered duty paid (DDP) etc., the responsibility of Vendor shall be to arrange for transportation of goods from their works as per standard practice defined under INCOTERMS 2020.

20. WARRANTY

The Vendor shall warrant that everything to be supplied under the contract shall be free from all defects and faults in material, workmanship and manufacturing defects and same shall be of the highest grade and consistent with the established and generally accepted standards of the materials of the type supplied and in full conformity with the specifications drawings or samples, if any, and shall if operable, operate, properly. This warranty shall survive inspection and acceptance of the goods but shall expire 12 months from the date of commissioning / operations or 24 months from the date of dispatch, whichever is earlier.

21. INVOICE

In case where documents are not routed through Bank, original plus one copy of invoice shall be directly sent to OIC immediately after dispatch with copies to purchaser and the consignee mentioned in Contract / Purchase Order. Invoice must bear the Purchase Order no. with date and should also indicate the dispatch particulars. It may be noted that the documents will be retired only if the dispatches are made as per the terms of the Purchase Order.

22. PACKING & MARKING

While dispatching ordered stores, it will be the responsibility of the Vendor to properly pack the consignment so as to enable its delivery at destination free from loss, damage or

pilferage. Each packing must contain a list of stores ("Packing List") packed therein. Each packing / bundle must be prominently marked with order no. and packing no. & consignee name & address.

23. DESPATCH DOCUMENTS

The Vendor will intimate dispatch particulars to PLL through e-mail at the time of dispatch of goods.

The dispatch documents shall consists of Invoice, Challan, Packing List, GR/LR, inspection/ Test Certificate and any other document(s) as mentioned in the P.O. Copies of dispatch documents should reach PLL well in advance failing which any demurrage / wharfage etc. incurred on account of late / non-receipt of dispatch document / wrong dispatches of consignment will be recovered from supplier. In case of documents through Bank, it may be noted that the documents will be retired only if the dispatches are made as per the terms of the Purchase Order.

24. REPEAT ORDER

PLL reserves the right within six months of order, to place repeat order up to 50% of the total order value without any change in unit price or other terms and conditions of the contract.

25. RECOVERY OF SUMS DUE

All costs, damages or expenses which the PLL may have suffered, for which under the Contract, Seller is liable, may be recovered by the PLL (he is hereby irrevocably authorized to do so) from any money due to or becoming due to the Vendor under this Contract or other Contract and / or may be recovered by action at law or otherwise if the same due to the Vendor is not sufficient to recover the recoverable amount, the Vendor shall pay to the PLL, on demand, the balance amount.

26. PAYMENTS ETC. NOT TO AFFECT RIGHTS OF THE PLL

No sum paid on account by the PLL nor any extension of the date for completion granted by the PLL shall affect or prejudice the rights of the PLL against the Vendor or relieve the Vendor of his obligation for the due fulfilment of the Contract.

Losses due to non-compliance of Instructions, losses or damages suffered by PLL owing to the Vendor's failure to adhere to any of the instructions given by the PLL in connection with the order execution shall be recoverable from the Seller.

27. CUT-OFF DATES

No claims or correspondence on this Order shall be entertained by the PLL after 90 days after expiry of the performance guarantee (from the date of final extension, if any)

28. FALL CLAUSE

28.1. The price charged for the materials supplied under the Contract by the Vendor shall in no event exceed the lowest price at which the Vendor or his agent/principal/dealer, as the case may be, supplies the materials of identical description to any Persons/Organizations including the Purchaser or any Department of the Central Govt. or any Department of a State Govt. or any Statutory Undertaking of the Central or State Govt. as the case may be, during the term of the Contract.

28.2. If at any time during the said Term , the Vendor or his agent/principal/dealer, as the case may be, reduces the sale price, sells or offers to sell such materials to any persons/organizations including the Purchaser or any Deptt. Of Central Govt. or State Govt. as the case may be, at a price lower than the price chargeable under the Contract, he shall forthwith notify such reduction or sale or offer of sale to the PLL and the price payable under the Contract for the Goods supplied after the date of coming into force of such reduction or sale or offer of sale shall stand correspondingly reduced.

28.3. The supplier shall furnish the following certificate to PLL along with each bill for payment for supplies made against this order: - "I/We certify that there has been no reduction in sale price of the items/goods/materials of description identical to those supplied to the PLL under the order herein and such items/goods/materials have not been offered/sold by me/us to any person/organizations including the Purchaser or any Deptt. of Central Govt. or any Deptt. of State Govt. or any Statutory Undertaking of the Central or State Govt. as the case may be upto the date of bill/during the Term of this Contract whichever is later, at a price lower than the price charged to the PLL under the Contract".

29. INDEMNITY AND INSURANCE

The Vendor shall purchase and maintain at his cost, such insurance as will protect the parties from any claim which may arise out of or result from the Vendor's performance of its obligations or otherwise under the Contract, whether such claim may arise due to action or omission by the Vendor or a Sub-Vendor or by anyone directly or indirectly contracted or used by any of them, or by anyone for whose acts any of them may be liable.

All policies of insurance referred to in this Clause shall be endorsed to specify that they are primary to and not excess to or on a contributing basis with any insurance or self-insurance maintained by Owner and Vendor (and their respective Affiliates) or any Sub Vendors in respect of losses arising out of or in connection with the Work.

Further, the Vendor shall indemnify and keep indemnified PLL and its every member, officer and staff against all actions, proceedings, claims, costs and expenses whatsoever in respect of or arising out of any failure or default by the Vendor in due performance of its obligations under this Contract.

The Vendor shall undertake to provide comprehensive accident insurance coverage in respect of every employee employed by it for carrying out PLL's job.

The Vendor hereby agrees to indemnify and keep indemnified PLL and its employees, in case PLL faces any legal actions, proceedings, claims, costs, expenses, damages, loss on account of breach, if any, terms and conditions of the Contract including infringement of IPR by the Vendor.

30. TAXES AND DUTIES

30.1. Unless otherwise specified in the NIT / Tender document, all duties, taxes and other levies including cess on all duties, taxes and other levies (excluding GST) payable by the Vendor under the Contract shall be included in the schedule of prices submitted by the Vendor as per format.

30.2. The monthly bill in duplicate will have to be submitted by the Vendor to the OIC at the rates specified and the payment will be made after verification of the same. On no account any extra payment whatsoever will be made to the Vendor for this contract. The bills should be supported by copies of payment including statutory payments in respect of each personnel engaged by the Vendor.

30.3. The Vendor shall be fully and exclusively responsible for the payment (and liable for all consequences in the event of default) of all contribution and taxes for unemployment compensation, insurance and old age pensions and amenities now or hereafter imposed by any law of the Government / local bodies which are imposed with respect to or covered by the wages, salaries or other compensation paid to the persons employed by the Vendor.

30.4. After award of work, GST as applicable shall be paid by PLL to the Vendor based on the Taxable invoices issued by the Vendor.

30.5. PLL shall accept only E-Invoice compliant invoices, in case the provisions are applicable.

30.6. TDS along with surcharge as applicable at the prevailing rate on the gross amount billed shall be deducted from the Vendor's invoice as per applicable laws.

30.7. Change in Law

If at any time any change in Indian Law causes an imposition of any new tax in India, that was not in existence as on Bid Submission Date / Date of Letter of Award (LoA), which is applicable to the Vendor under this Contract, then either Party may request a revision of the payments made or to be made to Vendor under this Contract. Either Party, as the case may be, shall provide notice to the other Party of such request setting forth the proposed amount along with relevant details and calculations relating to, such change.

The Parties shall promptly , but in no case later than fifteen (15) days from the date of such written request, discuss in good faith and mutually agree to revise the payments pursuant to such change along with the basis of such revision and the effective date of such revision.

For avoidance of any doubt, it is clarified that any new tax shall be to the account of PLL. Similarly, the benefit of any decrease in the corporate tax rates shall be passed on by the Vendor to PLL. either by way of refund or an adjustment in the payments due and payable to Vendor in accordance with this Contract.

31. UNETHICAL PRACTICES

31.1 The Vendor represents, warrants and agrees that no Person has been retained or employed to solicit this Contract upon any arrangement or understanding for the payment of any commission, fee or other compensation of any kind, except for compensation to bona fide employees of the Vendor.

31.2 The Vendor further represents and warrants that neither it nor any of its Affiliates nor any of its or their respective personnel have made, received, provided or offered and the Vendor agrees that neither it nor any such other entity or Person shall make, receive, provide or offer, any gift, entertainment, payment, loan or other consideration for the purpose of influencing any person to any course of conduct in any way relating to or affecting this Contract.

31.3 Without in any way limiting the nature of breaches which could constitute 'material breaches' of this Contract / LOA for the purposes of clause 8 of GCC, Parties hereby expressly agree that breach of the foregoing representations and warranties shall constitute a material breach of this Contract and shall give Owner the right to immediately terminate this Contract pursuant to Clause 8 of GCC.

32. DISPUTE RESOLUTION

32.1. In the event of a dispute between the Owner and the Vendor regarding , arising out of, relating to or in connection with this Contract, including, its application, interpretation, breach, termination, validity or invalidity (a **"Dispute"**), prior to the initiation of any legal action or proceeding (but only in accordance with and as permitted by this Contract) in relation to a Dispute, the OIC and the Vendor's Representative shall, upon the written request of either the Owner or the Vendor (a **"Request"**), use their best efforts in good faith to reach at a reasonable and equitable resolution in relation to the Dispute.

32.2. If the OIC and Vendor's Representative are unable to resolve the Dispute within thirty (30) days of receipt by either Party of a Request, either Party may by a written notice (a "**Notice**"), refer the matter for resolution by good faith negotiation between their respective senior officers with appropriate decision making powers and who shall not have had any substantive involvement in the matters related to the Contract, unless the Parties otherwise agrees.

32.3. If the senior officers are unable to resolve the Dispute within thirty (30) days of receipt by either Party of a Notice (or such other period as may be mutually agreed), either Party may resort to the other Dispute resolution provisions.

32.4. The Parties agrees to use their best efforts to resolve all Disputes promptly, amicably, equitably and in good faith.

33. ARBITRATION {Applicable for Contract Value more than INR 2 Crores}

In case the dispute is not resolved as mentioned above, the same shall be referred to Arbitration comprising of an Arbitration Tribunal of three arbitrators, of whom each Party shall nominate one arbitrator. The third arbitrator (who shall act as Presiding Arbitrator) shall be nominated by the two arbitrators, nominated by the Parties.

The arbitration shall be conducted in accordance with the provisions of the (Indian) Arbitration and Conciliation Act, 1996 ("Act") as amended from time to time. The venue of arbitration shall be in New Delhi, India and proceedings shall be conducted in English language.

The Award of the arbitral tribunal shall be final and binding upon the Parties.

Notwithstanding the fact that settlement of dispute(s) (if any) under arbitration may be pending, the parties hereto shall continue to be governed by and perform the work in accordance with the provisions under this Contract.

34. JURISDICTION AND APPLICABLE LAW

This Contract including all matter connected to this Contract, shall be governed by the laws of India and shall be subject to exclusive jurisdiction of the courts of New Delhi.

35. LICENSE / CERTIFICATE / CONSENT / APPROVAL {IF APPLICABLE}

Seller shall procure, at his expense, all necessary permits, certificates and licences required by virtue of all applicable laws, codes, regulations, ordinances and other rules in effect at the place where any of the work is to be performed, and Seller further agrees to hold PLL harmless from liability or penalty which might be imposed by reason of any asserted or established violation of such Codes, laws, regulations, ordinances or other rules. PLL will provide necessary permits for Seller's personnel to undertake any work in India in connection with Contract.

The consent / approval / license / certificate for carrying out the work from the concerned authority shall be kept valid for the entire duration of the contract and it shall be the sole responsibility of the Vendor / bidder to maintain / renew the validity of the such consent / approvals thereunder from time to time, failing which it may lead to cancellation of contract.

36. LIMITATION OF LIABILITY

Notwithstanding anything contrary contained herein, the aggregate total liability of Supplier to Employer under the Contract shall not exceed the Total Contract Value, except that this clause shall not limit the liability of the Supplier for following:

(a) In the event of breach of any Applicable Law;

(b) In the event of fraud, wilful misconduct or illegal or unlawful acts, or gross Negligence of the Supplier or any person acting on behalf of the Supplier; or

(c) In the event of acts or omissions of the Supplier which are contrary to the most elementary rules of diligence which a conscientious Supplier would have followed in similar circumstances; or

(d) In the event of any claim or loss or damage arising out of infringement of Intellectual Property; or

(e) For any damage to any third party, including death or injury of any third party caused by the Supplier or any person or firm acting on behalf of the Supplier in executing the job.

However, neither party shall be liable to the other Party for any indirect nor consequential loss or damage like loss of use, loss of profit, loss of production or business interruption which is connected with any claim arising under the Contract.

37. COMPLIANCE OF PLL INSIDER'S TRADING

By virtue of association / engagement with Petronet LNG Limited (PLL), it is likely that certain Unpublished Price Sensitive Information (UPSI) as defined under "Code for Prevention of Insider Trading in the Securities of PLL" (hereinafter called Code), copy of which is hosted on the website of the company www.petronetlng.com, that is not generally available and which upon becoming generally available is likely to materially affect the price of the securities issued by PLL, might be shared with you / your organization. It is hereby cautioned that you or any of your team members or immediate relatives thereof or your organization, should not trade in the securities of PLL while in possession of such UPSI or communicate such UPSI to any person except in furtherance of legitimate purposes (as defined in the Code), performance of duty or discharge of legal obligations. Any trades in securities of PLL, directly or indirectly, while in possession of any UPSI would be presumed to have been motivated by the knowledge and awareness of the UPSI and the onus to prove that trades were executed otherwise would be on you or any of your team members or your organization as the case may be. It is therefore advised that all concerned as stated above must familiarize himself/themselves with the "Code for Prevention of Insider Trading in the Securities of PLL", copy of which is hosted on the website of the company.

Accordingly, it must be ensured that any UPSI, whenever received from the company:

(a) shall be used solely for the purpose for which it is being disclosed;
(b) shall be preserved and the secrecy of such information shall be maintained;
(c) shall not be disclosed to any third party;
(d) shall be kept securely and properly protected against theft, damage, loss and unauthorized access (including access by electronic means) by deploying means similar to those being used to secure its own confidential information;
(e) to notify PLL immediately upon becoming aware that any of the confidential information has been disclosed to or obtained by a third party.

It may be noted that any violation in dealing with UPSI shall be considered as breach of terms of engagement / Contract and PLL shall take necessary action for such breach in addition to reporting to SEBI for taking necessary action under SEBI (Prohibition of Insider Trading) Regulations, 2015 or subsequent amendments thereof. Further, SEBI may take any

action including levy of penalty etc. as per SEBI Regulations in this regard in case of any violation in dealing with UPSI at your end.

38. PROCEDURE FOR PUTTING AN AGENCY ON HOLIDAY AND BANNING LIST

Procedure for putting an agency on Holiday and Banning list is enclosed at Attachment-I .

39. PROCEDURE FOR EVALUATION OF PERFORMANCE OF VENDORS/ CONTRACTORS/ CONSULTANTS

Procedure for evaluation of performance of Contractor is enclosed at Attachment-II

Attachment-I

PROCEDURE FOR PUTTING AN AGENCY ON HOLIDAY AND BANNING LIST

DEFINITION:

"Agency" shall mean Bidder / vendor / Contractor / Supplier / Consultant of Petronet LNG Limited (PLL).

"Corrupt practice" means the offering, giving or soliciting of anything of pecuniary advantage value to improperly influence by abuse of entrusted power, the procurement process or in contract execution.

"Fraudulent practice" includes any act or omission committed by an agency / entity by misrepresenting, misleading/submitting false document and or false information or concealment of facts in order to influence the procurement process as well as during the execution of contract.

"Collusive practice" amongst bidders means a scheme or arrangement designed to establish bid prices at artificial non-competitive level and to deprive PLL of the benefit of free and open competition.

"Coercive practice" means impairing or harming or threatening to impair or harm directly or indirectly, any agency or its property to influence the improper actions of an agency, obstruction of any investigation or auditing of a procurement/contract process.

A. INTRODUCTION:

In the course of the bidding / contracting (procurement, works and service contracts), agencies (bidder(s) / vendor(s) / supplier(s) / contractor(s) / consultant(s)) are expected to adopt ethics of highest standards and a high degree of integrity, safety & quality consciousness, commitments and sincerity towards terms and conditions of the tender(s) / order (s) undertaken. Any aberration, deviation and violation from the expected behaviour of the Agencies need to be dealt appropriately by putting the Agencies on holiday or banning list for specific periods so that it becomes a deterrent for all the future transactions.

1. HOLIDAY LIST

An Agency may be put in the Holiday list in case if:

a. It has refused to accept LOA/LOI/Purchase order/contract (order value 10 Lakhs and above) after the same is issued within the period of Bid validity and as per agreed terms & conditions or,

b. The materials supplied by the Agency are found to be defective and fails to perform during its use/operation. Premature failure of the work executed by contractor/failure of equipment during the operation, and not giving the desired result as per provision of the contract or,

c. The rating of the vendor/ consultant come to be POOR as per Procedure For Evaluation Of Performance Of Vendors/ Contractors/ Consultants

d. It is declared or is in the process of being declared bankrupt, insolvent, wound up, dissolved or partitioned; or

e. It persistently violates provisions of labor laws/ regulations / rules, safety norms, environmental norms or other statutory requirements; or

2. <u>BANNING LIST</u>

Any Agency can be put in the Banning list in case if:

a. if it is involved in an instance of Corrupt, Fraudulent, Collusive and Coercive practice against PLL.

b. it is involved in fraudulent activity, wilful misconduct, misrepresentation, mis-declaration, security considerations or,

c. it has indulged in any type of forgery or falsification of records; or

d. the proprietor of the firm, its employee(s), partner(s) or representative(s) is / are convicted by a court of law for offences involving moral turpitude in relation to business dealings.

e. There is strong justification for believing that the proprietor or employees or representatives of firm have been guilty of malpractices such as bribery, corruption, fraud, substitution of tenders, interpolations, misrepresentation, evasion or default in payment of any tax levied by law.

B. DELETED

C. <u>Procedure To Be Followed For Irregularities Observed At Various Stages</u>

1. Irregularities noticed during Bidding Process:

If any irregularity mentioned in Clause A.2 is observed during bidding process/ bids evaluations stage the bid of such Bidder (s), it shall be rejected after due approval from the competent authority and following the due procedure.

In case the irregularities are found to be true the EMD/ Bid security of such Bidder shall be forfeited.

2. Irregularities noticed after award of contract

(i) During execution of contract:

In case irregularities are found to be true the contract shall be suspended with immediate effect.

The Agency shall be banned / put on holiday list for future business with PLL for a period specified in Clause (D) below from the date of issue of banning / holiday order.

The PBG submitted by such agency against such order/ contract shall also be forfeited.

The amount that may have become due to the contractor on account of work already executed by him shall be payable to the contractor and this amount shall be subject to adjustment against any amounts due from the contractor under the terms of the contract.

(ii) After execution of contract and during Defect liability period (DLP)/ Warranty/ Guarantee Period:

In case irregularities are found to be true, the Agency shall be banned / put on holiday list for future business with PLL for a period specified in Clause (D) below from the date of issue of banning / holiday order.

The PBG submitted by such Agency against such order/ contract shall also be forfeited.

(iii) After expiry of Defect liability period (DLP)/ Warranty / Guarantee Period.

In case irregularities are found to be true, the Agency shall be banned / put on holiday list for future business with PLL for a period specified in Clause (D) below from the date of issue of banning / holiday order.

3. Exceptional Cases:

~~(i)~~ However, as an exception, the ongoing order(s)/ contract(s) where irregularities has been observed, the Agency may be allowed to complete the supply/ job in case of following situations:

a) No adverse performance of the job as per scope of work (performance to be reviewed on quarterly basis) and.

b) The supply/ jobs are of critical nature in terms of adverse impact on the Project Completion Schedule and or prospective revenue generation.

(ii) DELETED

(III) The Performance Bank Guarantee (PBG), of such Agency against the order (s)/ contract (s) where Agency is allowed to complete the supply/ job in above exceptional case shall not be forfeited on this ground. The contract shall be executed as per terms and conditions of the contract. However, the Agency shall be put on Banning / Holiday List from the date of banning order.

4. Effect of Banning on other ongoing Contracts/ Tenders

(i) If an Agency is put on Banning / Holiday List, such Agency should not be considered in ongoing tenders/ further tenders.

(ii) However, if such an Agency is already executing other order(s)/ contracts (s) where no irregularities are observed, the agency should be allowed to continue till its completion without any further increase in scope except those incidentals to original scope mentioned in the Contract.

D. HOLIDAY / BANNING PERIOD

(i) The Agency can be put on Holiday for a time period ranging from 6 months to 3 years. The committee examining the case shall propose the holiday period in its recommendation.

(ii) Banning period shall be reckoned from the date of banning order and shall be of 3 years.
In exceptional cases where the act of vendor/ contractor is a threat to the National Security, the banning shall be for indefinite period.

Attachment-II

PROCEDURE FOR EVALUATION OF PERFORMANCE OF VENDORS/ CONTRACTORS/ CONSULTANTS

1 GENERAL

A system for evaluation of Vendors/ Suppliers/Contractors/ Consultants and their performance is a key process and important to support an effective purchasing & contracting function of an organization.

Performance of all participating Vendors/ Suppliers/Contractors/ Consultants need to be closely monitored to ensure timely receipt of supplies from a Vendor, completion of an assignment by a Consultant or complete execution of order by a contractor within scheduled completion period. For timely execution of projects and meeting the operation & maintenance requirement of operating plants, it is necessary to monitor the execution of order or contracts right from the award stage to completion stage and take corrective measures in time.

2 OBJECTIVE

The objective of Evaluation of Performance aims to recognize and develop reliable Vendors/ Suppliers/Contractors/ Consultants so that they consistently meet or exceed expectations and requirements.

The purpose of this procedure is to put in place a system to monitor performance of Vendors/ Suppliers/Contractors/ Consultants associated with PLL in Projects and in O&M so as to ensure timely completion of various projects, timely receipt of supplies including completion of works & services for operation and maintenance of operating plants and quality standards in all respects.

3 METHODOLOGY

i) Preparation of Performance Rating Data Sheet

Performance rating data Sheet for each and every Vendor/ Supplier/Contractor/ Consultant for all orders/Contracts with a value of Rs. 7 Lakhs and above is recommended to be drawn up. These data sheets are to be separately prepared for orders/ contracts related to Projects and O&M. Format, Parameters, Process, responsibility for preparation of Performance Rating Data Sheet are separately mentioned.

ii) Measurement of Performance

Based on the parameters defined in Data Sheet, Performance of concerned Vendor/ Supplier/Contractor/ Consultant would be computed and graded accordingly. The measurement of the performance of the Party would be its ability to achieve the minimum scoring of 60% points in the given parameters.

iii) Initiation of Measures:
Depending upon the Grading of Performance, corrective measures would be initiated by taking up the matter with concerned Vendor/ Supplier/Contractor/ Consultant. Response of Vendor/ Supplier/Contractor/ Consultant would be considered before deciding further course of action.

iv) Implementation of Corrective Measures:
Based on the response of Vendor/ Supplier/Contractor/ Consultant, concerned Engineer-in-Charge for the Projects and/or OIC in case of O&M would recommend for continuation or discontinuation of such party from the business of PLL.

v) Orders/contracts placed on Proprietary/OEM basis for O&M will be evaluated and, if required, corrective action will be taken for improvement in future.

4 EXCLUSIONS:

The following would be excluded from the scope of evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants:

i) Orders/Contracts below the value of Rs. 7 Lakhs (increase value).

ii) One time Vendor/ Supplier/Contractor/ Consultant.

iii) Orders for Misc./Administrative items/ Nonstock Non valuated items.

However, concerned Engineer-in-Charge /OICs will continue to monitor such cases so as to minimize the impact on Projects/O&M plants due to non-performance of Vendors/ Suppliers/Contractors/ Consultants in all such cases.

5 PROCESS OF EVALUATION OF PERFORMANCE OF VENDORS/ SUPPLIERS/ CONTRACTORS/ CONSULTANTS

5.1 FOR PROJECTS

i) Evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants in case of PROJECTS shall be done immediately with commissioning of any Project.

ii) On commissioning of any Project, EIC (Engineer-in-charge)/ Project-in-charge shall prepare a Performance Rating Data Sheet (Format- 1) for all Orders and Contracts excluding cases under para 4.0.

iii) Depending upon the Performance Rating, following action need to be initiated by Engineer-in-charge/Project-in-charge:

S.No.	Performance Rating	Action
1	POOR	Seek explanation for Poor performance

2	FAIR	Seek explanation for Fair performance
3	GOOD	Letter to the concerned for improvir performance in future
4	VERY GOOD	No further action

iv) Reply from concerned Vendor/ Supplier/Contractor/ Consultant shall be examined. In case of satisfactory reply, Performance Rating data Sheet to be closed with a letter to the concerned for improving performance in future.

v) When no reply is received or reasons indicated are unsatisfactory, the following actions need to be taken:

A. Where performance rating is "POOR"

Recommend such defaulting Vendor/Supplier/Contractor/ Consultant for putting on Holiday as per "Procedure for Putting an Agency on Holiday and Banning List" As mentioned elsewhere in the Tender document

i) Poor Performance due to reasons other than Quality: **One Year**

ii) Poor Performance on account of Quality (if any mark obtained against Quality parameter is less than 30): **Two Years**

iii) Poor Performance leading to termination of contract or Offloading of contract due to poor performance solely attributable to Vendor/Supplier/Contractor/Consultant or Repeated Offence: **Three Years**

Non-performance of a Vendor/Supplier/Contractor/Consultant leading to termination of Contract/ Order such Vendor/ Supplier/ Contractor/Consultant are also to be considered for Holiday.

In all such cases, concerned site will put up recommendation and putting the party on Holiday list as per process defined in "Procedure for putting an agency in Holiday list and Banning list"

B. Where Performance rating is "FAIR"

Recommend for issuance of warning to such defaulting Vendors/Contractors/Consultants to improve their performance.

5.2 FOR CONSULTANCY JOBS

Monitoring and Evaluation of consultancy jobs will be carried out in the same way as described in para 5.1 for Projects except the functions of Project Manager will be performed by concerned In-charges of user Deptts. Such as Project Development, Business Development, HR, Finance, HSE etc.

5.3 FOR OPERATION & MAINTENANCE

i) Evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants in case of Operation and Maintenance shall be done immediately after execution of order/ contract.

ii) After execution of orders a Performance Rating Data Sheet (Format attached herewith) shall be prepared for Orders by C&P and for Contracts/Services by respective Engineer-In-Charge excluding cases under para 4.0.

iii) Depending upon Performance Rating, following action need to be initiated by C&P

Sl. No.	Performance Rating	Action
1	**POOR**	Seek explanation for Poor performance
2.	**FAIR**	Seek explanation for Fair performance
3	**GOOD**	Letter to the concerned for improving performance in future.
4	**VERY GOOD**	No further action

iv) Reply from concerned Vendor/ Supplier/Contractor/ Consultant shall be examined. In case of satisfactory reply, Performance Rating data Sheet to be closed with a letter to the concerned for improving performance in future.

v) When no reply is received or reasons indicated are unsatisfactory, the following actions need to be taken:

A. Where performance rating is “POOR”

Recommend such defaulting Vendor/Supplier/Contractor/ Consultant for putting on Holiday as per “Procedure for Putting an Agency on Holiday and Banning List" As mentioned at Annexure I:

i) Poor Performance due to reasons other than Quality: **One Year**

ii) Poor Performance on account of Quality (if any mark obtained against Quality parameter is less than 30): **Two Years**

iii) Poor Performance leading to termination of contract or Offloading of contract due to poor performance solely attributable to Vendor/Supplier/Contractor/Consultant or Repeated Offence: **Three Years**

B. Where Performance rating is “FAIR”

Recommend for issuance of warning to such defaulting Vendors/Contractors/Consultants to improve their performance.

FORMATS

FORMAT-1

PETRONET LNG LIMITED

PERFORMANCE RATING DATA SHEET

i) Project/Work Centre :

ii) Order/ Contract No. & date :

iii) Brief description of Items Works/Assignment :

iv) Order/Contract value (Rs.) :

v) Name of Vendor/Supplier/ Contractor/ Consultant :

vi) Contracted delivery/ Completion Schedule :

vii) Actual delivery/ Completion date :

Performance Parameter	Delivery/ Comp Performance	Quality Perform	Reliability Performance#	Total
Maximum Mark	40	40	20	100
Marks Allocated				

Note:

Remarks (if any)

PERFORMANCE RATING (**)

Note:

(#) Vendor/Supplier/Contractor/Consultant who seek repeated financial assistance or deviation beyond contract payment term or seeking direct payment to the sub-vendor/sub-

contractor due to financial constraints, then ‘0’ marks should be allotted against Reliability Performance.

(*) Allocation of marks should be as per enclosed instructions

(**) Performance rating shall be classified as under:

Sl. No.	Range (Marks)	Rating
1	60 & below	POOR
2	61-75	FAIR
3	76-90	GOOD
4	More than 90	VERY GOOD

Signature of Authorised Signatory:

Name:

Designation:

Instructions for allocation of marks

1. Marks are to be allocated as under:

1.1 **DELIVERY/ COMPLETION PERFORMANCE** **40 Marks**

	Delivery Period/ Completion Schedule	**Delay in Weeks**	**Marks**
a)	Upto 3 months	Before CDD	40
		Delay upto 4 weeks	35
		” 8 weeks	30
		” 10 weeks	25
		” 12 weeks	20
		” 16 weeks	15
		More than 16 weeks	0
b)	Above 3 months	Before CDD	40
		Delay upto 4 weeks	35
		” 8 weeks	30
		” 10 weeks	25
		” 16 weeks	20
		” 20 weeks	15
		” 24 weeks	10
		More than 24 weeks	0

1.2 QUALITY PERFORMANCE — 40 Marks

For Normal Cases: No Defects/ No Deviation/ No failure		40 marks
i. Rejection/Defects	Marks to be allocated prorata basis for acce Quantity as compared to Quantity for normal cases	10 marks
ii. When quality Failure en System integration and sa the system	Failure of severe nature - Moderate nature - low severe nature	0 marks 5 marks 10-25 marks
iii. Number of Deviations	1. No deviation: 2. No. of deviations < 2: 3. No. of deviations > 2:	5 marks 2 marks 0 marks

1.3 RELIABILITY PERFORMANCE — 20 Marks

A	FOR WORKS/CONTRACTS	
i)	Submission of order acceptance, agreement, PBG, Drawings and other documents within time	4 marks
ii)	Mobilization of resources as per Contract and in time	4 marks
iii)	Liquidation of Check-list points	4 marks
iv)	Compliance to statutory and HS&E requirements or Reliability of Estimates/Design/Drawing etc. in case of Consultancy jobs	4 marks

v)	Timely submission of estimates and other documents for Extra, Substituted & AHR items	4 marks
B.	**FOR SUPPLIES**	
i)	Submission of order acceptance, PBG, Drawings and other documents within time	5 marks
ii)	Attending complaints and requests for after sales service/ warranty repairs and/ or query/ advice (upto the evaluation period).	5 marks
iii)	Response to various correspondence and conformance to standards like ISO	5 marks
iv)	Submission of all required documents including Test Certificates at the time of supply	5 marks

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स्वदेशी सामग्रियों के लिए पैकिंग, मार्किंग, शिपिंग और दस्तावेज विनिर्देश

PACKING, MARKING, SHIPPING AND DOCUMENTATION SPECIFICATIONS FOR INDIGENOUS MATERIALS

Rev. No	Date	Purpose	Prepared by	Reviewed by	Approved by
1	10-09-2018	ISSUED FOR COMPLIANCE	DDC	DRC	ED (SCM)
0	05-12-2012	ISSUED FOR COMPLIANCE	DDC	DRC	GM (I)

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Abbreviations:

CM	-	Centimeters
EIL	-	Engineers India Limited
E-way bill	-	Electronic Way Bill
Kg	-	Kilograms
FTL	-	Full Truck / Trailer Load
KGS	-	Kilograms
L.R.	-	Lorry Receipt / Goods Receipt
mm	-	Millimetre
MT	-	Metric Ton
NO. / NOS.	-	Number / Numbers
P.O.	-	Purchase Order
RCM	-	Resident Construction Manager

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1. GENERAL

1.1 Purpose

This specification details the minimum requirements for the preservation, packing, marking, shipping and documentation of Products, materials and equipment as specified in the respective Purchase Orders or Contracts. This specification forms an integral part of the Purchase Order or Contract issued. However, whenever specific instructions are detailed in the Purchase Order and are in conflict with this specification, particular instructions mentioned in the individual Purchase Order or Contract shall prevail over this general specification.

1.2 Requirements and Conditions

The following requirements are intended as minimum requirements, and compliance to these requirements in no way absolves or relieves Supplier of any responsibility or obligation outlined in the Purchase Order. Equivalent or better packing methods may be deployed wherever supplier's own packing standards are more stringent to the requirements mentioned herein. Supplier shall submit the packing procedure or its equivalent for purchaser's approval during detailed engineering.

In all circumstances, the packing will be designed and constructed in order to support materials during transportation as well as to prevent the materials from damage due to impact, extreme climatic conditions, sun and rain. It must be ensured that the materials and equipments are delivered to the job site by sea, road or air, in good condition.

The Supplier shall, at its own cost, ensure items to be transported are carefully packed and protected in accordance with best practice, having due regard to the climatic conditions encountered during the passage, method of carriage and handling / loading / unloading processes. In addition to any of the measures detailed within this Specification, the Supplier shall apply any other measures that, in its experience, are required to safeguard the particular item. The Supplier shall obtain the approval of EIL / Owner for any variation to the packing, marking and shipping requirements outlined in this Specification.

1.3 Responsibility and liability

Supplier shall be held responsible for any damages and / or losses of all and any kind that may occur by not respecting these specifications. Owner / EIL reserves the right to reject any packing when the packing does not conform to these specifications / instructions and / or when the packing does not ensure perfect protection of the goods and materials. Supplier is responsible for the weights and dimensions declared and the marking of the packages. Supplier will be held responsible in the event goods and materials becoming useless, broken or damaged as a result of poor packing and / or stowing or due to corrosion because of insufficient or inadequate protection. All direct and indirect costs resulting thereof will be back charged to Supplier.

2. CLEANING AND PRESERVATION

2.1 Cleaning

All equipment, materials and parts shall be thoroughly cleaned inside and outside and shall be free from grease, oil, weld spatter, rust and all other foreign matter prior to preservation.

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2.2 Preservation

Articles may be exposed to severe environmental or climatic conditions, moisture and dust. All materials and equipment shall be packaged suitable to prevent damage and deterioration during transportation and storage. Where damage occurs due to inadequate packaging of items, the liability for costs associated with rectification of the damage will be to the Supplier's account. All metals subject to corrosion shall be treated with a corrosion preservative suitable for the purpose intended. Products susceptible to corrosion must be packaged in a dry non-corrosive environment for the duration of shipment and storage, for a minimum of 1 year. All bright and machined parts shall be coated with a recognized rust preventative suited to the particular application concerned. All internal parts of machinery shall be treated with lubricant containing rust and oxidation inhibitors to protect equipment from any possible damage. Such lubricants shall be compatible with those which will subsequently be used in service and shall be identified by appropriate tagging. Electrical equipment and instrumentation shall be packed with a suitable desiccant. Delicate equipment such as instruments, electrical switchboards and panels etc. shall be packed for protection to eliminate the effects of vibration.

Wherever necessary, desiccant packs shall be kept to avoid excessive moisture in the packing.

3. PACKING

3.1 General

The instructions herein shall be considered as general directives and minimal requirements, which are applicable to the packing of all equipment and materials. The Supplier is responsible for the correct and adequate packing of the equipment and materials so that these equipment and materials will arrive at destination undamaged and the packing itself in such a condition that, if not otherwise required, it will be suitable for a minimum of 1 year storage.

3.2 Packaging Materials

All packaging together with packaging and protective materials shall be new, maintain its integrity and perform its intended function while being transported, handled and stored.

The quality of packing shall provide maximum protection against damage, breakage and pilferage during transport, storage and multiple handling, including handling by hoisting, lifting devices and / or forklift trucks. Material used for packaging, packing, wrapping, sealers, moisture resistant barriers and corrosion preservatives shall be of recognized brands and grades and shall conform to the best world standards.

Packaged Products showing any damage, defect or shortage resulting from improper packaging, packaging materials or packing procedure or having concealed damage or being short at the time of unpacking shall be subject to rejection and be replaced at the Supplier's cost

3.3 Packing requirements

3.3.1 Wooden Boxes and Crates

Interior support board shall be of strength to withstand multiple handling. Tops of crates shall be one piece wherever possible to avoid seepage through cracks; otherwise a top coating is required. Waterproof lining shall be used for sides, ends and top of crates, proper venting of cargo boxes containing machinery is required, as well as sufficient use

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of desiccants. Crates shall be diagonally braced on all faces and suitable for hooks, slings and forklifts. Heavy items shall be secured with wood braces. Fragile items shall be cushioned. Material packed in large boxes shall be layered between plywood sheets to maintain load integrity during transit. Banding shall be used on all boxes to prevent distortion / deformation of the box.

3.3.2 Pallets

When equipment and/or materials are packed on pallets (wood or synthetic), these should be solid double deck pallets that provide adequate load support during transportation and storage (under not always ideal conditions). The pallets should have a dynamic load capacity, enough to carry the mass loaded on the pallet. Where feasible, the top surface of the pallet must be flat. The pallet design must enable safe handling by forklift, cranes etc. and storage on rough surface. Pallets shall be covered with wrapping. All corners, horizontal and vertical shall be protected with cardboard protection strips. The pallet must be tide on all sides with steel or synthetic straps.

3.4 Packaging

All equipment and materials shall be properly fixed (by bolts, clamps, supporting beams, etc.) in such a way that internal movements and / or loosening is impossible. Under the top cover (roof) depending on the case and crate length, a. sufficient number of strong beams shall be placed and properly fixed in order to allow stacking of the cases and crates avoiding any compression. Equipment parts and materials which may be subject to damage by vibration and /or shock must be protected using shock-absorbing material. All equipment and materials which may be damaged by moisture shall be packed in airtight bags in which sufficient desiccant material (e.g. silica gel) is placed. All openings on the equipment must be closed with wooden / metal or plastic covers to prevent damage to the openings and interiors. Fragile and loose parts easily damageable pertaining to the equipment must be securely and properly packed in a separate case.

3.5 Waterproofing

Cases including the cover shall be internally lined with a strong type of waterproof paper or plastic foil. Equipment and materials shall always be packed in a foil (polyethylene or aluminum) for extra (double) protection against rainfall. Those foils shall be applied in such a way that they are self draining.

3.6 Hazardous cargo

The hazardous materials shall be packed in accordance with and in cognizance to the applicable rules, regulations and tariff of all Governmental Authorities and other Governing bodies. Hazardous materials shall always be packed and documented separately from any other material. It shall be the responsibility of the seller of hazardous materials to designate the materials as hazardous and to identify each material by its proper commodity name and its hazardous materials class code. Safety and emergency procedures shall be displayed outside the package. Any certificates required for transportation or for authorities to be supplied before shipment of the goods

4. GUIDELINES FOR PACKING GOODS

In subsequent paragraphs details of different types of packing for different types of goods are defined. Supplier shall make packing details / procedure based on the guidelines and submit for approval.

Chemicals in powder form, catalysts, refractories & like materials etc. shall be packed in drums only.

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4.1 Pipe

All pipes 2" included and below shall be packed in crates. All pipes to be capped and ends sealed with waterproof tape. Pipes over 2" up to 6", shall be bundled and banded in bundles of uniform length. Bundling is carried out with U-IRON or traversal planks, joined with threaded connecting rods with locknuts.. Bundle weight shall not exceed 2,000 kg. All pipes are to be capped and ends sealed with waterproof tape (tape is not necessary if end caps are of the pre-shrunk or self-sealing type).Pipes larger than 6" shall be shipped as single lengths with the ends capped. End caps are to be of the recessed type to enable the use of soft faced hooks, but still completely sealing the end and also protecting the weld. All stainless steel / non-ferrous piping must be packed separately in wooden crates. Any banding of bundles is to be with the same material. The bundling and packing of pipe and instrument tubing shall enable the safe discharge of pipe on site using clamps and forklifts. All pipes shall be supported along their lengths to prevent bending / flexing during transport. During loading / unloading slings shall be applied to the center of the load as well as each end to prevent bowing.

Pipe and rigid conduit smaller than DN50 diameter shall be bundled in units not to exceed 1000 kg. Threaded and coupled pipe shall be equipped with plastic thread protectors. All material shall be segregated and shipped by generic material type to prevent cross contamination. Where wire rope or chains are used, adequate padding shall be used at points of contact with pipe. Care must be taken to prevent any chafing of pipes against each other or against the metal structures of the vehicle during transportation. Where necessary, such metal structures must be padded with planks or plastic tubes. Skids and dunnage must be used between the bundles in transit as well as in the storage of coated pipes.

4.2 Pipe Fittings, Flanges, Valves and Gaskets

All pipe fittings, flanges and valves up to 6", are to be packed in cases / crates. For items over 6", these may be fixed securely to a pallet base and enclosed in a crate, for protection. All flange faces / bevel ends shall be suitable protected with plastic caps / end protectors. Where valves have actuators attached, rigidity must be ensured for the valve and actuator. The vulnerable parts of the actuator are to be completely protected within a wooden crate. Empty spaces shall be filled with expanded PU foam to restrict movement in the crate. All stainless steel fittings, flanges and valves of all sizes, must be packed separately in wooden crates. Any strapping is to be with the same material. Gaskets are considered fragile and shall be treated as such. Individual gasket sizes shall be boxed and labeled separately.

All threaded fittings and pipes should be greased and provided with plastic caps.

4.3 Steel Structure and Plates

Structural steel sections and plates shall be strapped in bundles of convenient size and weight for handling. Rolled and shaped plates shall be provided with suitable bracing to eliminate distortion during transit, and shall be bundled in uniform lengths. Each bundle shall be marked with a metal tag, hard stamped, secured under steel wrapping. A 2000 kg limitation shall be imposed for lifts in this category unless exempted.

4.4 Itemized Equipment

Units or parts belonging to main equipment but separately packed shall be clearly marked for easy identification with the main equipment to which they relate.

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All flanges, machined working surfaces and threaded parts of all equipment shall be suitably protected. All flanged connections of vessels shall be protected by metal plates correctly casketed by wooden plugs or plastic caps suitably secured in position.

Vessels shall, where possible, be packed on skid constructions and secured with adjustable steel straps. Manholes and other major openings shall be protected with cover flanges or metallic plates firmly secured. Smaller openings shall be closed with plastic plugs / caps.

All vessel internals and items not installed by Supplier at works including accessories such as small parts, bolts, nuts, gaskets, etc. shall be packed in wooden cases separately for each vessel or apparatus and marked with the same item number as the vessel / apparatus in order to protect all parts from loss or damage in transit. Internals, bolts and gaskets for service / testing operations shall be supplied with the vessels / items by Supplier and all internals shall be boxed separately and marked according to marking procedure; each item shall be supplied correctly and identified for field installation by others.

All vessels / heat exchangers or items of such construction shall be dried, thoroughly cleaned inside and be free of all dirt and loose foreign materials. The equipment shall be filled with Nitrogen. Make up arrangement for loss of Nitrogen along with a pressure gauge shall be installed.

All commissioning spare parts shall be packed separately and marked with the relevant main item number.

Pumps, compressors, rotating equipment, turbines and motors will require specific packing and preservation as per the relevant Technical Specification. For skidded equipment openings, flange faces, threaded connections, wires, valve stems, and other component parts that may be subjected to mechanical damage or corrosion shall be adequately protected. This protection shall be applied to all components, both those removed and boxed and those remaining in place on the skid assembly. Each skid shall have one box strapped to it containing a complete set of drawings together with a manual covering installation and operating instructions and other pertinent instructions required for reassembly of components that were disassembled for shipment.

4.5 Control Panels and Electrical Devices

Equipment such as control panels, instruments and electrical devices shall be packed in an interior moisture / vapor-proof barrier with silica gel or comparable desiccant. Desiccants shall be bagged to avoid dispersing in containers. The quantity of desiccant shall be calculated in accordance with the manufacturer's recommendations. Equipment must be secured to the case with bolts, blocks or straps. Adequate precautions (for example, shaft locks to prevent longitudinal / rotational movement of rotor shafts in motors) shall be included in the packaging of all equipment which has plain, ball or roller bearings so as to minimize the risk of bearing damage.

4.6 Instruments

Instruments shall be thoroughly clean, dry and free from rust and individually wrapped using polythene sheets / U foam / Thermocol sheets depending upon the items and then packed in wooden boxes. The left out spaces and top of the boxes should be filled with rubberized coir to get proper cushioning effect. Special attention shall be paid for arresting movements of their operating mechanism during transportation. Silica gel or

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other approved desiccant shall be strapped inside but shall not come into contact with the paintwork.

4.7 Cables

All electric cables to be packed in new cable drums made of steel and painted with epoxy resin paint. Cable ends to be carefully protected before packing. Polythene sheet should be wrapped over the cables and sealed properly. Cable drum can be put in wooden crates for ease in handling and transportation.

4.8 Saddles, Supports, Spiders and Lifting Equipment

All items which cannot be transported without independent supports must be supplied with Shipping saddles suitable for land and / or ocean transit. Such transport saddles are to be included within the scope of supply. Supplier is to advise of any requirement for lifting beams or other specialized lifting equipment and will include provision for use of such equipment for loading purposes. The Supplier is responsible for ensuring that all modules and oversize items are adequately braced and where required, plastic wrapped suitable for transport. Modules and oversize items shall be packaged to prevent damage during transport.

4.9 Assortment Of Package / Spare Parts for Erection and Commissioning

Equipment and / or parts of different item numbers shall not be packed together in the same package. Small goods such as accessories, spare parts for erection and commissioning and special tools shall be packed separately in respective inner boxes with tags or labels attached there being clearly indicating their contents. In case such accessories, spare parts and special tools are packed in separate boxes / crates, item no. of main equipment shall be clearly mentioned in Main Shipping Mark for easy identification.

5. MARKING

5.1 General

The purpose of the marking is to identify the packages and detail the weight and dimensions to assure efficient and correct handling during transport and upon arrival at destination.

5.2 Marking Instructions & dispatch details

Packages and crates will be marked with indelible black paint. Marking must be perfectly legible. All packages shall be clearly and properly marked in English language if not otherwise specified.

The shipping marks, which will be shall be stenciled on two sides and one end in clear characters at least 5 centimeters high (where crate size permits, otherwise use optimum size for each package dimension).

The texts shall be printed by means of stamps, stencil-plates or electronically. The use of stickers is not allowed, unless securely covered by plastic. Bundles shall be marked by embossing on two metal tags bearing the shipping marks and placed on each side of the package and securely attaching them to the goods. Paint shall be used on metal surfaces.

Labels or tags to be clearly visible and shall be of a quality to remain visible and attached during transit, handling and storage for a minimum period of 12 Months.

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Crates containing fragile articles must be packed with special precaution against risk of breakage and must be stenciled on all sides "FRAGILE - HANDLE WITH CARE". Where crates are not to be overturned, Supplier must show on the crates, clear and readily visible identification, to ensure they are kept in the correct position.

Packages / equipment of 2,000 kg or more must be marked with slinging points on all sides, in addition to the centre of gravity marks.

Number packages consecutively i.e. 1 of 10, 2 of 10, etc. Do not duplicate package numbers. SUPPLIER is responsible for any loss or damage caused by incorrect marking.

All cases/crates shall also be marked with the appropriate international standard graphic symbols for handling.

As a minimum, all cases/crates are to be marked clearly on all four sides with:

"HANDLE WITH CARE" "RIGHT SIDE UP" "KEEP DRY"

In the case of packages with a single gross weight totaling 2,000 kg and / or a height of more than 1m, the centre of gravity shall be clearly marked with the symbol on two adjoining sides. For all items of equipment with an eccentric centre of gravity this symbol shall be marked at the bottom, side and top of the package.

The slinging and lashing points shall be marked with a chain symbol.

When packing in cases / crates, these packages shall also have metal corners at the slinging points.

External front and rear sides of the boxes shall be planed for writing instructions. To facilitate identification, the required colour coding as per the specifications shall be carried out on each package and on corners of pipes & plates.

In case of bundles or other packages wherever marking cannot be stenciled, the same shall be embossed on metal or similar tag and wired securely at minimum two convenient points and both ends shall be protected / covered with gunny bags upto 18" (Eighteen Inches). In case of loose pipes, sticker of above markings should be pasted on inner wall corner of each pipe on both sides

Dispatch details such as consignor / consignee address, contract and case details, stacking instructions shall be written on one side of the boxes. One copy of packing slip wrapped in polyethylene bag covered with aluminum packing slip holder to be nailed on the external surface of the box. A packing list and preservation instructions shall be enclosed in a clear weatherproof plastic re-sealable envelope stapled to the box such that the receiver may determine contents without opening the container. An additional packing list is to be enclosed in a clear waterproof plastic re-sealable envelope stapled inside the container. Stapling of the envelopes shall not prevent removal of the documents.

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5.3 Shipping Marks

Each package shall be marked on three sides with proper paints / indelible waterproof ink as follows:

(OWNER)

(DESTINATION)

PURCHASE ORDER NO. ----------

NET WEIGHT ---------- KGS. GROSS WEIGHT ---------- KGS.

DIMENSIONS ---------- X ---------- X ---------- CMS

PACKAGE NOS. (SL. NO. OF PACKAGE) OF (TOTAL NO. OF PACKAGES)

TAG / ITEM NO. ----------

SUPLLIER'S NAME----------

The details of the Owner / Project are defined specifically in the Purchase Order / Contract.

5.4 Storage Code

The type of storage required is required to be specified, it will be shown on each packaging in RED colour

X	Crates or packages to be stored outdoor without covers
XX	Crates or packages to be stored under tarpaulin
XXX	Crates or packages to be stored in covered or enclosed premises
XXXX	Crates or packages which must be stored in air-conditioned premises

6. SHIPMENT

Dispatch of material shall be made in accordance with the relevant terms of Purchase Order. Name of the owner, Project, location and other relevant information shall be as per the relevant annexure(s) to the Purchase Order / Contract.

Any change in mode of transport shall be resorted to only after prior approval in writing. Supplier shall ensure dispatch of equipment / materials immediately after they are

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inspected and released. All consignments should be booked in the name of 'owner' and not under 'self' basis.

6.1 Dispatch By Road:

a) The Materials shall be dispatched on Door-Delivery basis (smalls or FTL) through a registered transporter.

However, in case, the transporter is nominated by EIL / Owner, the goods shall be dispatched through the same only.

b) The supplier shall ensure with Transport Company the delivery of materials within a reasonable transit period. A complete set of dispatch documents (Delivery Challan / Invoice / Packing List / Test Certificate / L.R. / E-way Bill number etc.) shall be sent to Head (Shipping) at EIL New Delhi and the Resident Construction Manager (RCM) at site.

6.2 Shipment By Air:

Whenever supplier is instructed by EIL/ Owner to airfreight any material, the supplier shall take prompt action for the same. Immediately after air-shipment is effected, the vendor shall intimate by e-mail, the details of Airway Bill number and date, the flight No., Number of packages etc. to Head-Shipping, EIL New Delhi and Resident Construction Manager at EIL (Site).

6.3 Destination:

The consignments should be dispatched to the Consignee / Address as detailed in the Purchase Order.

6.4 Advance Information:

Immediately after a shipment is made supplier shall intimate Underwriter, Head (Shipping) and RCM vide mail regarding particulars of materials, value, Purchase Order No., date of dispatch, L.R. number, E-way Bill No., truck no., name of Transport Company.

6.5 Transmission of Dispatch Documents :

Supplier shall, within 48 hrs. of the dispatch of the materials depending upon the payment terms of the Purchase Order, either negotiate through Owner's / EIL's Bankers or forward directly, by Courier the complete set of dispatch Documents (as detailed in Purchase Order) to Owner / EIL. The supplier shall be responsible for any delay in clearance of the consignment at destination and consequent wharfage / demurrage, if any, due to delay in transmittal of the required documents.

7. TRANSIT RISK INSURANCE

All equipments / materials will be insured for transit risk by (Owners) unless otherwise specified. The insurance cover will be provided from warehouse-to-warehouse.

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विदेशी सामग्रियों के लिए पैकिंग, मार्किंग, शिपिंग और दस्तावेज विनिर्देश

PACKING, MARKING, SHIPPING AND DOCUMENTATION SPECIFICATIONS FOR IMPORTED MATERIALS

Rev. No	Date	Purpose	Prepared by	Reviewed by	Approved by
1	10-09-2018	ISSUED FOR COMPLIANCE	DDC	DRC	ED (SCM)
0	05-12-2012	ISSUED FOR COMPLIANCE	DDC	DRC	GM (I)

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Abbreviations:

CM	-	Centimeters
DDP	-	Delivered Duty Paid
DGR	-	Dangerous Goods Regulation
EIL	-	Engineers India Limited
ETA	-	Estimated time of arrival at Destination Port
ETD	-	Estimated time of Departure at the Port of Loading
EXIM	-	Export Import Policy of India
FCA	-	Free Carrier
IATA	-	International Air Transport Association
IMDG	-	International Maritime Dangerous Goods
ISPM 15	-	International Standards of Phytosanitory Measures 15
Kg	-	Kilograms
mm	-	Millimetre
MSDS	-	Material Safety Data Sheet
MT	-	Metric Ton
NO. / NOS.	-	Number / Numbers
P.O.	-	Purchase Order
UN NO.	-	Unique Identification Number given for Hazardous Goods

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1. GENERAL

1.1 Purpose

This specification details the minimum requirements for the preservation, packing, marking, shipping and documentation of Products, materials and equipment as specified in the respective Purchase Orders or Contracts. This specification forms an integral part of the Purchase Order or Contract issued. However, whenever specific instructions are detailed in the Purchase Order and are in conflict with this specification, particular instructions mentioned in the individual Purchase Order or Contract shall prevail over this general specification.

1.2 Scope

Supplier shall be responsible for sea worthy export packing capable of performing all necessary functions like prevention of damage to the contents, sufficient to support frequent handling and lengthy period of outdoor storage in adverse weather conditions. Workmanship and materials used shall be of high standard meeting the technical requirements and in accordance with best commercial export packing practices. Supplier shall be responsible for sea worthy export packing, however, it shall meet the minimum requirements specified herein. Equivalent or better packing methods may be deployed wherever supplier's own packing standards are more stringent to the requirements mentioned herein. Supplier shall submit the packing procedure or its equivalent for purchaser's approval during detailed engineering.

The scope of this specification is to define Supplier's responsibilities in terms of:

- Preservation of the materials and equipments before packing.
- Packing of the materials and equipments for road, rail, sea and/or air transportation to ultimate destination i.e. project site.
- Making cases/crates
- Chemical Treatment/Fumigation before packing to prevent fungus and damage
- Marking of cases/crates.
- Documentation for shipments

1.3 Responsibility and liability

Supplier shall be held responsible for any damages and/or losses of all and any kind that may occur by not respecting these specifications. Owner/EIL reserves the right to reject any packing when the packing does not conform to these specifications/instructions and/or when the packing does not ensure perfect protection of the goods and materials. Supplier is responsible for the weights and dimensions declared, and the marking of the packages. Supplier will be held responsible in the event goods and materials becoming useless, broken or damaged as a result of poor packing and/or stowing or due to corrosion, because of insufficient or inadequate protection. All direct and indirect costs resulting thereof will be back charged to Supplier.

1.4 Requirements and Conditions

The following requirements are intended as minimum requirements, and compliance to these requirements in no way absolves or relieves Supplier of any responsibility or obligation outlined in the Purchase Order. In all circumstances, the packing will be designed and constructed in order to support materials during transportation as well as to prevent the

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materials from damage due to impact, extreme climatic conditions, sun and rain. It must be ensured that the materials and equipments are delivered to the job site by sea, road or air, in good condition.

The method of packing and packaging materials must be sufficient to protect the goods from the hazards associated with handling and storage conditions encountered in transit and at site. The method of marking packages must be sufficient to distinguish each package from others. The documentation prepared for shipments must be sufficient for use in international transportation and customs clearance procedures.

The Supplier shall, at its own cost, ensure items to be transported are carefully packed and protected in accordance with best practice, having due regard to the climatic conditions encountered during the passage, method of carriage and handling / loading / unloading processes. In addition to any of the measures detailed within this Specification, the Supplier shall apply any other measures that, in its experience, are required to safeguard the particular item. The Supplier shall obtain the approval of EIL/Owner for any variation to the packing, marking and shipping requirements outlined in this Specification.

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Articles may be exposed to severe environmental or climatic conditions, moisture and dust. All materials and equipment shall be packaged suitable to prevent damage and deterioration during transportation and storage. Where damage occurs due to inadequate packaging of items, the liability for costs associated with rectification of the damage will be to the Supplier's account. All metals subject to corrosion shall be treated with a corrosion preservative suitable for the purpose intended. Products susceptible to corrosion must be packaged in a dry non-corrosive environment for the duration of shipment and storage, for a minimum of 1 year. All bright and machined parts shall be coated with a recognized rust preventative suited to the particular application concerned. All internal parts of machinery shall be treated with lubricant containing rust and oxidation inhibitors to protect equipment from any possible damage. Such lubricants shall be compatible with those which will subsequently be used in service and shall be identified by appropriate tagging. Electrical equipment and instrumentation shall be packed with a suitable desiccant. Delicate equipment such as instruments, electrical switchboards and panels etc. shall be packed for protection to eliminate the effects of vibration.

Wherever necessary, desiccant packs shall be kept to avoid excessive moisture in the packing.

3. PACKING

3.1 General

The instructions herein shall be considered as general directives and minimal requirements, which are applicable to the packing of all equipment and materials. The Supplier is responsible for the correct and adequate packing of the equipment and materials so that these equipment and materials will arrive at destination undamaged and the packing itself in such a condition that, if not otherwise required, it will be suitable for a minimum of 1 year storage.

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3.2 Packaging Materials

All packaging together with packaging and protective materials shall be new, maintain its integrity and perform its intended function while being transported, handled and stored.

The quality of packing shall provide maximum protection against damage, breakage and pilferage during transport, storage and multiple handling, including handling by hoisting, lifting devices and / or forklift trucks. Material used for packaging, packing, wrapping, sealers, moisture resistant barriers and corrosion preservatives shall be of recognized brands and grades and shall conform to the best world standards.

Timber material shall be treated / fumigated to prevent infestation by insects or similar for all material in accordance with ISPM 15. ISPM 15 describes phytosanitary measures to reduce the risk of introduction and/or spread of quarantine pests associated with solid timber packaging material (includes dunnage). Any packing made of wood, must be made from new, treated wood (according to ISPM 15 IPPC, latest version).Used cases, crates and cardboard packing are not allowed. Packaged Products showing any damage, defect or shortage resulting from improper packaging, packaging materials or packing procedure or having concealed damage or being short at the time of unpacking shall be subject to rejection and be replaced at the Supplier's cost

3.3 Packing requirements

3.3.1 Wood treatment

All solid wood, used for packing (including wooden pallets) and/or stowage should be treated (heat treatment or fumigation) according to the international standard ISPM 15 (IPPC), latest version. Use of untreated wood is not acceptable. Phytosanitary Certificate, Fumigation or treatment certificates have to be issued by the official government authorities and must accompany the original set of shipping documents.

3.3.2 Wooden Boxes and Crates

Interior support board shall be of strength to withstand stevedore handling. Tops of crates shall be one piece wherever possible to avoid seepage through cracks; otherwise a top coating is required. Waterproof lining shall be used for sides, ends and top of crates, proper venting of cargo boxes containing machinery is required, as well as sufficient use of desiccants. Crates shall be diagonally braced on all faces and suitable for hooks, slings and forklifts. Heavy items shall be secured with wood braces. Fragile items shall be cushioned. Material packed in large boxes shall be layered between plywood sheets to maintain load integrity during transit. Banding shall be used on all boxes to prevent distortion / deformation of the box.

3.3.3 Pallets

When equipment and/or materials are packed on pallets (wood or synthetic), these should be solid double deck pallets that provide adequate load support during transportation and storage (under not always ideal conditions). The pallets should have a dynamic load capacity, enough to carry the mass loaded on the pallet. Where feasible, the top surface of the pallet must be flat. The pallet design must enable safe handling by forklift, cranes etc. and storage on rough surface. Pallets shall be covered with wrapping. All corners, horizontal and vertical shall be protected with cardboard protection strips. The pallet must be tide on all sides with steel or synthetic straps.

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3.4 Packaging

All equipment and materials shall be properly fixed (by bolts, clamps, supporting beams, etc.) in such a way that internal movements and / or loosening is impossible. Under the top cover –(roof) depending on the case and crate length, a. sufficient number of strong beams shall be placed and properly fixed in order to allow stacking of the cases and crates avoiding any compression. Equipment parts and materials which may be subject to damage by vibration and/or shock must be protected using shock-absorbing material. All equipment and materials which may be damaged by moisture shall be packed in airtight bags in which sufficient desiccant material (e.g. silica gel) is placed. All openings on the equipment must be closed with wooden / metal or plastic covers to prevent damage to the openings and interiors. Fragile and loose parts easily damageable pertaining to the equipment must be securely and properly packed in a separate case.

3.5 Waterproofing

Cases including the cover shall be internally lined with a strong type of waterproof paper or plastic foil. Equipment and materials shall always be packed in a foil (polyethylene or aluminum) for extra (double) protection against rainfall. Those foils shall be applied in such a way that they are self draining.

3.6 HAZARDOUS CARGO

All hazardous material must be packed in adherence to the detailed requirement relating to packing, marking and labeling set out in the most recent report of the Board's Standard Advisory Committee on the Carriage of Dangerous Goods in Ships for sea freight, and the Restricted Articles Regulations, laid down by the International Air Transport Association for airfreight.

Hazardous materials shall be suitably packaged, packed separately from other materials and shall not be encased inside other packaging containers. All packages shall be marked and labeled with markings and labels as stipulated by Road Transport, and the Dangerous Goods Regulations (DGR), laid down by the International Air Transport Association (IATA) for airfreight and Sea freight IMDG Codes and Regulations in accordance with government and agency requirements. Regulations and Codes as defined by the International Maritime Organization (IMO) together with Government and Regulatory Agencies within the country of origin, country of destination or country that the products shall transit through shall be adhered to at all times. All crates / boxes / drums / packages containing Hazardous material shall be marked clearly on the outside with the relevant international details (UN No, IMCO / IMDG class, Packing group etc.) and the relevant Material Safety Data Sheets (MSDS) must accompany the goods. The Supplier shall produce any necessary hazardous cargo certificates, as required by the appropriate Government and International Transportation regulations, for all such shipments.

Seller to inform Buyer on the following in details after shipment of Cargo:

- Hazard Identification
- Fire Fighting Measures
- Accidental Release Measures
- Handling & Storage

4. GUIDELINES FOR PACKING GOODS

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In the subsequent paragraphs details of different types of packing for different types of goods are defined. Supplier shall make packing details/procedure based on the guidelines and submit for approval.

Chemicals in powder form, catalysts, refractories & like materials etc. shall be packed in drums only.

4.1 Pipe

All pipes 2" included and below shall be packed in crates. All pipes to be capped and ends sealed with waterproof tape. Pipes over 2" up to 6", shall be bundled and banded in bundles of uniform length. Bundling is carried out with U-IRON or traversal planks, joined with threaded connecting rods with locknuts.. Bundle weight shall not exceed 2,000 kg. All pipes are to be capped and ends sealed with waterproof tape (tape is not necessary if end caps are of the pre-shrunk or self-sealing type).Pipes larger than 6" shall be shipped as single lengths with the ends capped. End caps are to be of the recessed type to enable the use of soft faced hooks, but still completely sealing the end and also protecting the weld. All stainless steel / non-ferrous piping must be packed separately in wooden crates. Any banding of bundles is to be with the same material. The bundling and packing of pipe and instrument tubing shall enable the safe discharge of pipe on site using clamps and forklifts. All pipes shall be supported along their lengths to prevent bending/flexing during transport. During loading/unloading slings shall be applied to the center of the load as well as each end to prevent bowing.
Pipe and rigid conduit smaller than DN50 diameter shall be bundled in units not to exceed 1000kg.Threaded and coupled pipe shall be equipped with plastic thread protectors. All material shall be segregated and shipped by generic material type to prevent cross contamination. Where wire rope or chains are used, adequate padding shall be used at points of contact with pipe. Care must be taken to prevent any chafing of pipes against each other or against the metal structures of the vehicle during transportation. Where necessary, such metal structures must be padded with planks or plastic tubes. Skids and dunnage must be used between the bundles in transit as well as in the storage of coated pipes.

4.2 Pipe Fittings, Flanges, Valves and Gaskets

All pipe fittings, flanges and valves up to 6", are to be packed in cases/crates. For items over 6", these may be fixed securely to a pallet base and enclosed in a crate, for protection. All flange faces / bevel ends shall be suitable protected with plastic caps / end protectors. Where valves have actuators attached, rigidity must be ensured for the valve and actuator. The vulnerable parts of the actuator are to be completely protected within a wooden crate. Empty spaces shall be filled with expanded PU foam to restrict movement in the crate. All stainless steel fittings, flanges and valves of all sizes, must be packed separately in wooden crates. Any strapping is to be with the same material. Gaskets are considered fragile and shall be treated as such. Individual gasket sizes shall be boxed and labeled separately.

All threaded fittings and pipes should be greased and provided with plastic caps.

4.3 Steel Structure and Plates

Structural steel sections and plates shall be strapped in bundles of convenient size and weight for handling. Rolled and shaped plates shall be provided with suitable bracing to eliminate distortion during transit, and shall be bundled in uniform lengths. Each bundle shall be marked with a metal tag, hard stamped, secured under steel wrapping. A 2000 kg limitation shall be imposed for lifts in this category unless exempted.

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4.4 Itemized Equipment

Units or parts belonging to main equipment but separately packed shall be clearly marked for easy identification with the main equipment to which they relate.

All flanges, machined working surfaces and threaded parts of all equipment shall be suitably protected. All flanged connections of vessels shall be protected by metal plates correctly casketed by wooden plugs or plastic caps suitably secured in position.

Vessels shall, where possible, be packed on skid constructions and secured with adjustable steel straps. Manholes and other major openings shall be protected with cover flanges or metallic plates firmly secured. Smaller openings shall be closed with plastic plugs / caps.

All vessel internals and items not installed by Supplier at works including accessories such as small parts, bolts, nuts, gaskets, etc. shall be packed in wooden cases separately for each vessel or apparatus and marked with the same item number as the vessel/apparatus in order to protect all parts from loss or damage in transit. Internals, bolts and gaskets for service/ testing operations shall be supplied with the vessels/ items by Supplier and all internal, boxed separately and marked according to marking procedure; each item shall be supplied correctly and identified for field installation by others.

All vessels / heat exchangers or items of such construction shall be dried, thoroughly cleaned inside and be free of all dirt and loose foreign materials. The equipment shall be filled with Nitrogen. Make up arrangement for loss of Nitrogen along with a pressure gauge shall be installed.

Accessories for apparatus and vessels (small parts, bolts, nuts, washers, gaskets, etc.) are to be packed in wooden cases, separately for each apparatus or vessel. These cases must be marked with the same item number as the apparatus / vessel to which they belong. All commissioning spare parts to be packed separately, shall be marked with the relevant main item.

Pumps, compressors, rotating equipment, turbines and motors will require specific packing and preservation as per the relevant Technical Specification. For skidded equipment openings, flange faces, threaded connections, wires, valve stems, and other component parts that may be subjected to mechanical damage or corrosion shall be adequately protected. This protection shall be applied to all components, both those removed and boxed and those remaining in place on the skid assembly. Each skid shall have one box strapped to it containing a complete set of drawings together with a manual covering installation and operating instructions and other pertinent instructions required for reassembly of components that were disassembled for shipment.

4.5 Control Panels and Electrical Devices

Equipment such as control panels, instruments and electrical devices shall be packed in an interior moisture/vapor-proof barrier with a silica gel or comparable desiccant. Desiccants shall be bagged to avoid dispersing in containers. The quantity of desiccant shall be calculated in accordance with the manufacturer's recommendations. Equipment must be secured to the case with bolts, blocks or straps. Adequate precautions (for example, shaft locks to prevent longitudinal / rotational movement of rotor shafts in motors) shall be included in the packaging of all equipment which has plain, ball or roller bearings so as to minimize the risk of bearing damage.

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4.6 Instruments

Instruments shall be thoroughly clean, dry and free from rust, shall be individually wrapped using polythene sheets/U foam/ thermocol sheets depending upon the items and then packed in wooden boxes. The left out spaces and top of the boxes should be filled with rubberized coir to get proper cushioning effect. Special attention shall be paid for arresting movements of their operating mechanism during transportation. Silica gel or other approved desiccant shall be strapped inside but shall not come into contact with the paintwork.

4.7 Cables

All electric cables to be packed in new cable drums made of steel and painted with epoxy resin paint. Cable ends to be carefully protected before packing. Over the cables polythene sheet should be wrapped and sealed properly. Cable drum can be put in wooden crates for ease in handling and transportation.

4.8 Saddles, Supports, Spiders and Lifting Equipment

All items which cannot be transported without independent supports must be supplied with Shipping saddles suitable for land and/or ocean transit. Such transport saddles are to be included within the scope of supply. Supplier is to advise of any requirement for lifting beams or other specialized lifting equipment and will include provision for use of such equipment for loading purposes. The *Supplier* is responsible for ensuring that all modules and oversize items are adequately braced and where required, plastic wrapped suitable for transport. Modules and oversize items shall be packaged to prevent damage during transport.

4.9 Assortment Of Package/ Spare Parts for Erection and Commissioning

Equipment and /or parts of different item numbers shall not be packed together in the same package. Small goods such as accessories, spare parts for erection and commissioning and special tools shall be packed separately in respective inner boxes with tags or labels attached there being clearly indicating their contents. In case that such accessories, spare parts and special tools is packed in separate boxes/ crates, item no. of main equipment shall be clearly mentioned in Main Shipping Mark for easy identification.

4.10 Containerization

As required the Supplier shall stuff the goods into 20 or 40 foot container (dry, open top, flat rack etc) Supplier to check the size of container before starting packing of equipment.

4.11 Protection of Cases/Crates

Since shipping containers are in general not water tight, packing in contact with the floor of the container shall be raised in order to prevent it from being damaged by accumulation of water.

It is responsibility of the Supplier to ensure that the cases/crates are stowed, secured and fastened inside the container. The Supplier shall take all the necessary precautions to conform to maximum weight allowed and centre of gravity of the container. The securing and fastening of the crates/cases can be carried out by nailing timbers on the bottom or on the vertical sides of the container.

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4.12 Air Transport Packing

Air freight of goods and materials will be exceptional and shall be used only for goods and materials urgently required at site, for goods and materials which are highly sensitive to shock or vibrations such as instruments or those of small dimensions and weight.

In all instances the packaging of materials and equipment to be transported by air shall be in accordance with International Air Transport Authority (IATA) regulations. Type of packing depends on the goods to be packed and Supplier may use one of the following types:

- Triple-corrugated container
- Wooden/cardboard packing cases
- Plywood cases

5. Marking

5.1 General

The purpose of the marking is to identify the packages and detail the weight and dimensions to assure efficient and correct handling during transport and upon arrival at destination.

5.2 Marking Instructions & despatch details

Packages and crates will be marked with indelible black paint, resistant to seawater. Marking must be perfectly legible. All packages shall be clearly and properly marked in English language if not otherwise specified

The shipping marks, which will be shall be stenciled on two sides and one end in clear characters at least 5 centimeters high (where crate size permits, otherwise use optimum size for each package dimension).

The texts shall be printed by means of stamps, stencil-plates or electronically. The use of stickers is not allowed, unless securely covered by plastic. Bundles shall be marked by embossing on two metal tags bearing the shipping marks and placed on each side of the package and securely attaching them to the goods. Paint shall be used on metal surfaces.

Labels or tags to be clearly visible and shall be of a quality to remain visible and attached during transit, handling and storage for a minimum period of 12 Months.

When the goods are to be shipped in containers then marking may be stenciled on one end only. However, packages must be stowed in a manner that shows these marks.

Crates containing fragile articles must be packed with special precaution against risk of breakage and must be stenciled on all sides "FRAGILE - HANDLE WITH CARE". Where crates are not to be overturned, Supplier must show on the crates, clear and readily visible identification, to ensure they are kept in the correct position.

Packages/equipment of 2,000 kg or more must be marked with slinging points on all sides, in addition to the centre of gravity marks.

Number packages consecutively i.e. 1 of 10, 2 of 10, etc. Do not duplicate package numbers. SUPPLIER is responsible for any loss or damage caused by incorrect marking.

All cases/crates shall also be marked with the appropriate international standard graphic symbols for handling.

As a minimum, all cases/crates are to be marked clearly on all four sides with:

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"HANDLE WITH CARE" "RIGHT SIDE UP" "KEEP DRY"

In the case of packages with a single gross weight totaling 2,000 kg and/or a height of more than 1m, the centre of gravity shall be clearly marked with the symbol on two adjoining sides. For all items of equipment with an eccentric centre of gravity this symbol shall be marked at the bottom, side and top of the package.

The slinging and lashing points shall be marked with a chain symbol.

When packing in cases/crates, these packages shall also have metal corners at the slinging points.

External front and rear sides of the boxes shall be planed for writing instructions. To facilitate identification, the required colour coding as per the specifications shall be carried out on each package and on corners of pipes & plates.

Dispatch details such as consigner/consignee address, contract and case details, country of origin, port of delivery, stacking instructions shall be written on one side of the boxes. One copy of packing slip wrapped in polyethylene bag covered with aluminum packing slip holder to be nailed on the external surface of the box. A packing list and preservation instructions shall be enclosed in a clear weatherproof plastic re-sealable envelope stapled to the box such that the receiver may determine contents without opening the container. An additional packing list is to be enclosed in a clear waterproof plastic re-sealable envelope stapled inside the container. Stapling of the envelopes shall not prevent removal of the documents.

5.3 Shipping Marks

Each shipping unit (package) shall be marked as shown below using letters of at least 50 mm in height. Markings shall be shown on the top and two (2) adjacent sides of each shipping unit/package and shall be of waterproof ink or exterior grade, waterproof paint in a colour which produces high contrast with the background. Packages in any one consignment shall be numbered consecutively and in sequence commencing with the number one (1).

(OWNER)

PROJECT

WITH COMPLETE

ADDRESS

VIA (PORT) INDIA

PURCHASE ORDER NO. ----------

NET WEIGHT ---------- KGS. GROSS WEIGHT ---------- KGS.

DIMENSIONS ---------- X ---------- X ---------- CMS

PACKAGE NOS. (SL. NO. OF PACKAGE) OF (TOTAL NO. OF PACKAGES)

TAG / ITEM NO. ----------

COUNTRY OF ORIGIN----------

SHIPPER'S NAME----------

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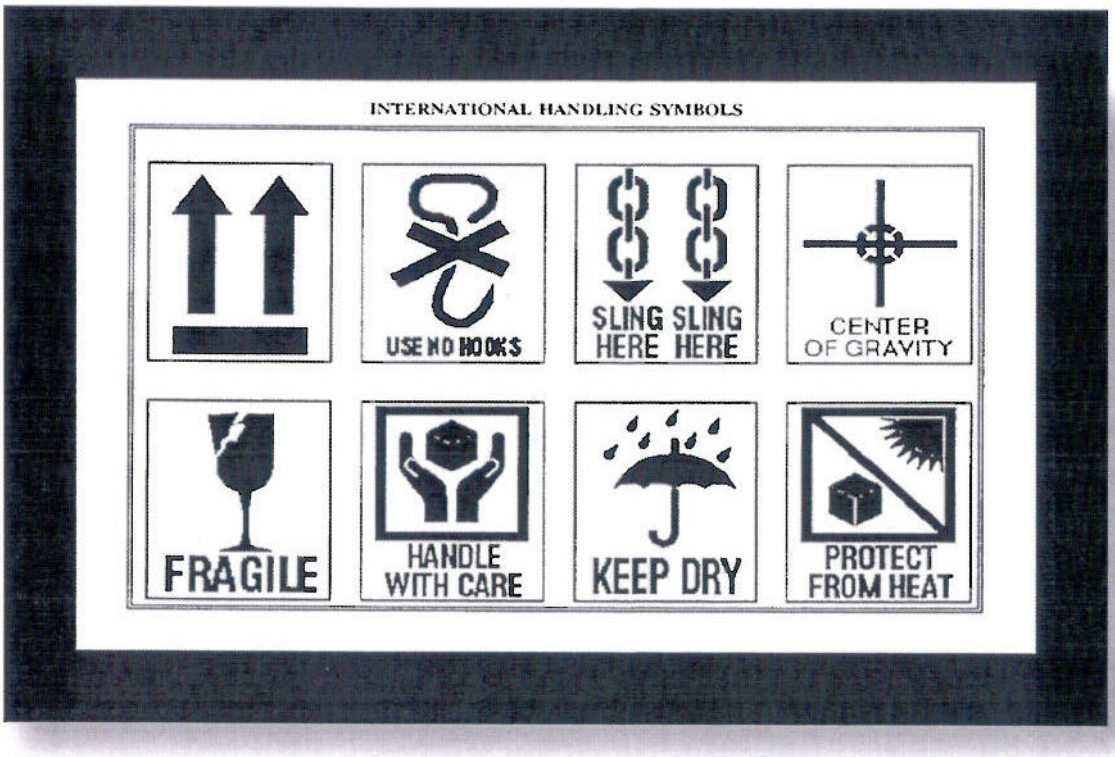
The details of the Owner / Project are defined specifically in the Purchase Order / Contract.

5.4 Cautionary Symbols

In order to facilitate loading unloading and handling of cargo, Supplier shall stencil the necessary Cautionary Symbols on the proper place at two (2) opposite ends of the package. Symbols for special handling are illustrated below. These symbols must be used whenever appropriate.



Symbols will be applied with exterior grade paint or waterproof ink in a colour that produces a High contrast with the surrounding background. Easily damaged material shall be Marked "FRAGILE" and also when required, "HANDLE WITHCARE", "COOL STORAGE", and / or "USE NO HOOKS". Material that must be kept upright to prevent damage, such as machinery, motors, etc., will be marked "THIS WAY UP" and if appropriate "TOP HEAVY", with arrows on all sides of box pointing to top. When required, due to length or unbalanced weight, crates or boxes will have a centre of gravity indicated by the relevant symbol and the words "CENTER OF GRAVITY" will appear in letters at least 24mm (1.0 inch) high, adjacent to stripes. Proper placement of the "SLING HERE" symbol will better insure correct use of lifting gear. Special marks, such as "FRAGILE", "KEEP DRY" or positional "DIRECTION ARROWS" shall be in RED.

5.5 Storage Code

The type of storage required is required to be specified, it will be shown on each packaging in RED colour

X	Crates or packages to be stored outdoor without covers
XX	Crates or packages to be stored under tarpaulin
XXX	Crates or packages to be stored in covered or enclosed premises
XXXX	Crates or packages which must be stored in air-conditioned premises

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6. Shipment:

6.1 By Sea:

For C & F / CIF Contracts

All shipment of Break bulk material and containerized cargo shall be made by suitable vessels certified for sea worthiness and complying with National / International safety regulations .No Trans-shipment is permitted for Break Bulk Cargo. All shipments shall be under-deck unless carriage on deck is unavoidable / permitted by consignee.

6.2 By Air:

Wherever the shipments are to be effected by Air (in case of FCA shipments), the same shall be dispatched through Consolidation Service Agent to be nominated by Owner/EIL.

6.3 Shipping Terms :

All shipping terms will be interpreted in accordance with INCOTERMS 2010 and all subsequent amendments

7. Documentation

7.1 All documents shall be in English Language.

7.2 Documents Required Before Shipment

7.2.1 The required Cargo Details (Preliminary) shall be provided by the supplier within the period defined in the P.O. Final Packing List with weight / dimension of individual package shall be provided to EIL at least four weeks before the contractual / actual date delivery at Port of loading.

Transport and lifting arrangement drawings are to be supplied for all Over –Weight and Over-Dimensioned packages as mentioned below or where shipping saddles are being provided. Such drawings must show clearly full dimensions, weights, centre of gravity, lifting and securing points and saddle locations.

7.2.2 The sketches of Over Dimensioned Cargo shall be mailed as follows :

EIL New Delhi - Head Shipping

EIL Port Office at Discharge Port - In-Charge (Shipping)

The Over Dimensioned Cargo shall mean any package exceeding any of the following limits.

Weight - 18 MT
Length - 12 Meters
Width - 03 Meters
Height - 03 Meters

7.3 Documents Required After Shipment

7.3.1 The supplier shall forward copies of the following shipping documents by E-mail :

1. Commercial Invoice
2. Bill of Lading / Airway Bill

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3. Packing List
4. Certificate of Origin (issued by Chamber of Commerce of the country of origin)
5. Inspection Release Note to the following:
   a) DGM (Inspection) at EIL New Delhi
   b) Project Manager at EIL New Delhi
   c) Head (Shipping) at EIL New Delhi
   d) In-Charge (Shipping) at EIL Port Office (Port of Discharge)
   e) Owner of the Project

In addition to above, complete set of original documents are required to be sent to (OWNER) / Paying Authority through Bank in terms of 'Letter of Credit'.
The supplier shall be fully responsible for any delay and / or demurrage that may become payable at destination Port on account of delay in transmittal of shipping documents as detailed in the Purchase Order.

7.3.2 In case of air shipments one set of non-negotiable documents consisting of Commercial Invoice (ink signed), Packing List, Certificate of Origin, Technical Literature shall be handed over to Freight Forwarder/Airlines with the instructions that the same should be handed over along with cargo arrival notice and copy of Airway Bill to Destination Airport Notify Party.

7.4 BILL OF LADING :

Bill of lading must be 'clean', must be endorsed "shipped on board" and must show details of gross weight and cubic measurement. If shipment is being arranged by the supplier it must also be endorsed "freight prepaid". Bill of Lading shall be made in favor of (OWNER) /Engineers India Limited/or order of bank (and **not order of the shipper**) and the notify column should indicate Engineers India Ltd. (PORT OFFICE).

7.5 COMMERCIAL INVOICE:

Commercial Invoice shall inter alia, indicate (i) PO No. & Date, (ii) Unit prices, (iii) Total Value, (iv) Full description of goods in conformity with the description of goods given in Purchase Order, (v) Inco Terms, (vi) Payment Terms, (vii) Import License No. (viii) Country of Origin (ix) HSN Code (Harmonized System of Nomenclature), (x) GSTIN No of Consignee.

Invoice value shall be for the materials actually shipped. Billing breakup if required for partial shipment shall be freezed and provided before shipment of the first lot of cargo.

In case of CHEMICALS / HAZARDOUS cargo FLASH-POINT should be indicated in all documents and a separate certificate giving composition and flash-point shall be sent.

7.6 PACKING LIST :

Packing lists shall show (i) PO No.(ii) Details of contents of each case including PO line Item number, Tag Number (Including sub-items and description); (iii) Number of packages by type and total number of packages (i.e. package 1 of 5, 2 of 5 and so on);(iv) Gross and net weight per package (including quantity of items per package);(v) Dimensions and cubic measurements per package in metric units (length, width and height); (vi) Cubic measurements and total gross and net eights of the entire shipment.

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Where containers are used a separate packing list must be produced for each Container. In case of pipes & plates in bundles, no. of pipes / plates with individual length in each bundle must be indicated.

8. SHIPPING ADVICE :

8.1 Within 24 hours of shipment, the supplier shall send shipping advice by e-mail to:

1) Head-Shipping, Engineers India Limited, New Delhi
2) EIL-Port office
3) Owner
4) Insurance Company as detailed in the Purchase Order

Giving particulars of the shipment, vessel's name / Airlines, Flight & Date on which material actually left (and not tentative flight No. and Date), Port of shipment, Bill of Lading / Airway Bill Number & Date, contents in brief, Purchase Order Number, total Invoice and Freight Values, Number of Packages and total gross weight, ETD & ETA of vessel. In case of Air shipment through consolidation services information must contain both Master Airway / House airway Bill Number.

8.2 In case of free replacement / supply of components / parts, the supplier shall intimate by e-mail above dispatch particulars along with specific statement '**Free Supply**' and **Value for customs purposes only**' and particulars of original shipment i.e., vessel name, Bill of Lading Number and date, Invoice Number etc. and send documents to EIL (Port Office) with Invoice bearing this statement.

9. ADDRESSES OF EIL PORT OFFICES

i) Head (Shipping)
Engineers India Ltd
Sector 16,
Gurugram - 122001 (India)
Phone No. +91 124 3802083
E-mail rk.singh@eil.co.in

ii) In-Charge (Shipping)
Engineers India Ltd.
Great Eastern Chambers
5th Floor, Plot No. 28
Sector-11, CBD-Belapur,
Navi Mumbai 400614 (India)
Phone No. + 91 22 27599335
Fax No. +91 22 27572011
E-mail kiran.suvarna@eil.co.in

iii) In-Charge (Shipping)
Engineers India Ltd.
Engineers India Bhavan,
F-9, First Main Road, SIPCOT IT Park,
Siruseri, Chennai-603103.
Phone No. +91 44 27469478(D) / 27469401/02 (Extn.1210)
E-mail vs.krishnaswamy@eil.co.in

10. TRANSIT RISK INSURANCE

All equipments / materials shall be insured against all marine and transit risks on warehouse to warehouse basis by owner and the necessary dispatch intimation shall be

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sent to the underwriters of Owner (as detailed in the Purchase Order) by Supplier. However, the Supplier shall ensure that in effecting shipments clean Bill of Lading is obtained and the carrier's responsibility is fully retained on the carrier so that consignee's interest are fully safeguarded and are in no way jeopardized.

11. SHORT SHIPMENTS

Supplier should thoroughly check all the items packed before shipment. If any item(s) are found short-packed in sound boxes on examination at project site by EIL, supplier shall be responsible to supply short-packed items free of charge (on Delivery Duty Paid at site basis), on receipt of advice from EIL.

12. Seller shall advise freight forwarder to indicate on the Invoice, Packing List & Bill of lading / Airway bill that the subject import into India is as per the provision of EXIM Policy prevalent in India.

13. Other Services to be provided by Supplier

In addition to packing and shipping documentation Supplier must carry out loading including lifting, securing, lashing and stowing of all cases, crates and packages onto means of transportation such as but not limited to trailers, containers etc.

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Item Wise BoQ

Tender Inviting Authority: GM (SCM), ENGINEERS INDIA LIMITED, GURUGRAM-122001, HARYANA

Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

Preamble to Price Schedule (BoQ):

i) This BOQ sheet shall be filled by FOREIGN BIDDER only.

ii) Currency of Quote shall be selected from USD/EUR/GBP/JPY from Column "5".

iii) Basic Supply Price shall be on FCA Airport of Exit basis.

iv) Bidders shall quote Air Freight charges till Airport of Entry in India for Main Item and Mandatory Spares at Column No.8. and 10 respectively.

v) "BASIC SUPPLY PRICE" should be inclusive of all taxes & duties applicable to the bidder but shall exclude Air Freight (which is sought separately)]. Any other charges indicated as applicable “EXTRA” elsewhere in the bid shall be considered “Included” in the quoted "BASIC SUPPLY PRICE". Bidder to note that no other charges except those quoted in the Price Schedule (BoQ) shall be considered for evaluation/ordering.

vi) Bidders are advised to not tamper with this BoQ format.

vii) Unit Rates for additon/deletion shall be quoted by the Bidder in BoQ sheet named with "Unit Rates" and the same are not considered for evaluation.

viii) 14 (Fourteen) Mandays towards Training of Owners Peronnel at Site shall be considered for the purpose commercial evaluation. However payment shall be made at actuals.

ix) Evaluation & Ordering shall be done on BOTTOMLINE BASIS. For details of each item, please refer the MR.

x) The order shall be awarded on LOWEST (L1) in Evaluated Prices to the qualified and techno-commercially acceptable bidder.For details of item, please refer the MR.

xi) Bidder shall ensure filling of prices in the adjacent excel sheet for 2 Year O&M Spares (as per MR requirements) titled-2 Year Spare.Prices for same shall not be considered for Commercial Evaluation.

xii) In case of any discrepancy in the Item Description/Tag No./ Qty. specified in this Price Schedule vis-à-vis the corresponding details in MR, the Item Description/Tag No./ Qty.specified in MR shall prevail.

xiii) In case of any sub-supply or services being offered by an Indigenous sub-supplier of the foreign bidder, prices for the same shall be filled in the adjacent Price Schedule (BoQ2).

xiv) Bidder shall quote a minimum of 5% (five percent) of the quoted supply prices. In case a supplier quotes Site Work charges less than 5% of supply price, the differential amount shall be retained from supply prices and the same shall be progressively paid along with last milestone of payment of Site Work (i.e. 10% on successful completion of site work and handing over of goods/equipment at site).

xv) Bidder shall quote a minimum of 10% (ten percent) of the quoted supply prices. In case a supplier quotes CPWAMC charges less than 10% of supply price, the differential amount shall be retained from supply prices and the same shall be progressively paid to the vendor on year wise prorated basis (based on the % distribution indicated under Sl. No. (iii) of Clause No. 21 of Bid Data Sheet).

xvi) Bidder shall quote a minimum of 1.5% (one point five percent) of the quoted supply prices. In case a supplier quotes Pre-commissioning, Commissioning,etc. charges less than 1.5% of supply price, the differential amount shall be retained from supply prices and the same shall be paid to the vendor along with the payment of Pre-Commissioning, Commissioning, etc..

xvii) Bidder shall quote the percentage break-up of individual line item in the adjacent sheet named "BREAKUP SHEET" along with the Un-Priced Bid, the same shall be considered for the purpose of payment.

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE (FOREIGN BIDDER)

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

Sl. No.	ITEM DESCRIPTION Design, engineering, manufacture, procurement of materials and bought out components, assembly at shop, inspection, testing at manufacturer's works, packing, delivery, documentation as per the enclosed EIL standard specifications, special instructions to vendors, job specification, data sheets etc. (As per MR)	QTY.	UNIT	Quoted Currency (Bidder to select from USD / EUR / GBP/JPY)	LUMPSUM BASIC SUPPLY PRICE OF MAIN ITEM ON FCA AIRPORT OF EXIT BASIS AS PER MR SL. NO. 01.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM SITE WORK CHARGES AS PER MR SL. NO. 02.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM AIR TRANSPORTATION CHARGES FOR MAIN ITEMS TILL AIRPORT OF ENTRY IN INDIA AS PER MR SL. NO. 03.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM BASIC SUPPLY PRICE OF MANDATORY SPARES ON FCA AIRPORT OF EXIT BASIS AS PER MR SL. NO. 04.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM AIR TRANSPORTATION CHARGES FOR MANDATORY SPARES TILL AIRPORT OF ENTRY IN INDIA FOR SL. NO. 04.00 (in currency selected as Col '5') (To be filled by bidder)	PER-DIEM CHARGES FOR TRAINING OF OWNER'S PERSONNEL AT SITE AS PER MR SL. NO. 11.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM CPWAMC CHARGES FOR THREE YEARS AS PER MR SL. NO. 12.00 (in currency selected as Col '5') (To be filled by bidder)	LUMPSUM PRE COMMISSIONING, COMMISSIONING CHARGES AS PER MR SL. NO. 20.00 (in currency selected as Col '5') (To be filled by bidder)
1	2	3	4	5	6	7	8	9	10	11	12	13
1.00	GROUP A: AAQMS and Display Board System (As per MR)	1	LOT	**USD**								

Validate | Print | Help | em Wise BoQ

Tender Inviting Authority: GM (SCM), ENGINEERS INDIA LIMITED, GURUGRAM-122001, HARYANA

Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

Preamble to Price Schedule (BoQ):

i) This BOQ sheet shall be filled by INDIAN BIDDER / INDIAN SUB-SUPPLIER OF FOREIGN BIDDER only.
ii) Currency of Quote shall be selected from INR only.
iii) Basic Supply Price shall be on FOT Despatch point basis.
iv) Bidders shall quote Road Transportation charges for Main Item and Mandatory Spares till Site at Column No.8 and 10 respectively.
v) "BASIC SUPPLY PRICE" should be inclusive of all taxes & duties (except GST) applicable to the bidder but shall exclude Road Transportation charges (which is sought separately). Any other charges indicated as applicable "EXTRA" elsewhere in the bid shall be considered "Included" in the quoted "BASIC SUPPLY PRICE". Bidder to note that no other charges except those quoted in the Price Schedule (BoQ) shall be considered for evaluation/ordering.
vi) Bidders are advised to not tamper with this BoQ format.
vii) Unit Rates for additon/deletion shall be quoted by the Bidder in BoQ sheet named with "Unit Rates" and the same are not considered for evaluation.
viii) 14 (Fourteen) Mandays towards Training of Owners Peronnel at Site shall be considered for the purpose commercial evaluation. However payment shall be made at actuals.
x) Evaluation & Ordering shall be done on BOTTOMLINE BASIS. For details of each item, please refer the MR.
xi) The order shall be awarded on LOWEST (L1) in Evaluated Prices to the qualified and techno-commercially acceptable bidder.For details of each item, please refer the MR.For details of each item, please refer the MR.
xii) Bidder shall ensure filling of prices in the adjacent excel sheet for 2 Year O&M Spares (as per MR requirements) titled-2 Year Spare.Prices for same shall not be considered for Commercial Evaluation.
xiii) In case of any discrepancy in the Item Description/Tag No./ Qty. specified in this Price Schedule vis-à-vis the corresponding details in MR, the Item Description/Tag No./ Qty.specified in MR shall prevail.
xiv) In case INDIAN bidder imports any material bidder to mandatorily fill and submit BUILT-IN-CIF format enclosed herewith.
xv) Bidder shall quote a minimum of 5% (five percent) of the quoted supply prices. In case a supplier quotes Site Work charges less than 5% of supply price, the differential amount shall be retained from supply prices and the same shall be progressively paid along with last milestone of payment of Site Work (i.e. 10% on successful completion of site work and handing over of goods/equipment at site).
xvi) Bidder shall quote a minimum of 10% (ten percent) of the quoted supply prices. In case a supplier quotes CPWAMC charges less than 10% of supply price, the differential amount shall be retained from supply prices and the same shall be progressively paid to the vendor on year wise prorated basis (based on the % distribution indicated under Sl. No. (iii) of Clause No. 21 of Bid Data Sheet).
xvii) Bidder shall quote a minimum of 1.5% (one point five percent) of the quoted supply prices. In case a supplier quotes Pre-commissioning, Commissioning,etc. charges less than 1.5% of supply price, the differential amount shall be retained from supply prices and the same shall be paid to the vendor along with the payment of Pre-Commissioning, Commissioning, etc..
xvi) Bidder shall quote the percentage break-up of individual line item in the adjacent sheet named "BREAKUP SHEET" along with the Un-Priced Bid, the same shall be considered for the purpose of payment.

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE (INDIAN BIDDER / INDIAN SUB-SUPPLIER OF FOREIGN BIDDER

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

Sl. No.	ITEM DESCRIPTION Design, engineering, manufacture, procurement of materials and bought out components, assembly at shop, inspection, testing at manufacturer's works, packing, delivery, documentation as per the enclosed EIL standard specifications, special instructions to vendors, job specification, data sheets etc. (As per MR)	QTY.	UNIT	Quoted Currency (in INR only)	LUMPSUM BASIC SUPPLY PRICE FOR MAIN ITEM EXCL. GST ON FOT DESPATCH POINT BASIS AS PER MR SL. NO. 01.00 (in currency INR) (To be filled by bidder)	LUMPSUM SITE WORK CHARGES GST TILL SITE AS PER MR SL. NO. 02.00 (in INR) (To be filled by bidder)	LUMPSUM ROAD TRANSPORTATION FOR MAIN ITEM CHARGES EXCL. GST TILL SITE AS PER MR SL. NO. 03.00 (in INR) (To be filled by bidder)	LUMPSUM BASIC SUPPLY PRICE FOR MANDATORY SPARES EXCL. GST ON FOT DESPATCH POINT BASIS AS PER MR SL. NO. 04.00 (in currency INR) (To be filled by bidder)	LUMPSUM ROAD TRANSPORTATION CHARGES FOR MANDATORY SPARES EXCL. GST TILL SITE FOR MR SL. NO. 04.00 (in INR) (To be filled by bidder)	PER-DIEM CHARGES FOR TRAINING OF OWNER'S PERSONNEL AT SITE EXCL. GST AS PER MR SL. NO. 11.00 (in INR) (To be filled by bidder)	LUMPSUM CPWAMC CHARGES FOR THREE YEARS EXCL. GST AS PER MR SL. NO. 12.00 (in INR) (To be filled by bidder)	LUMPSUM PRE COMMISSIONING, COMMISSIONING CHARGES EXCL. GST AS PER MR SL. NO. 20.00 (in INR) (To be filled by bidder)
1	2	3	4	11	6	7	8	9	10	11	12	13
1.00	GROUP A: AAQMS and Display Board System (As per MR)	1	LOT	INR								

Name of Work / Enquiry No.: Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

MR ITEM WISE PERCENTAGE BREAKUP SHEET

Name of the Bidder/ Bidding Firm / Company :						
ITEM_SL_NO	**GROUP_CODE**	**TAG NO. / ITEM CODE**	**DESCRIPTION (As per MR)**	**ITEM_QTY**	**UOM**	**Percentage Breakup for Supply , Site Work, Transportation**
1.0001	A	AAQMS-1	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1	Lot	
1.0002	A	AAQMS-2	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1	Lot	
1.0003	A	AAQMS-3	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1	Lot	
1.0004	A	AAQMS-4	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1	Lot	
1.0005	A	DISPLAY-1	Display Board System with UPS, Data Transmission Devices & Other System Components	1	Lot	
1.0006	A	DISPLAY-2	Display Board System with UPS, Data Transmission Devices & Other System Components	1	Lot	
1.0007	A	DISPLAY-3	Display Board System with UPS, Data Transmission Devices & Other System Components	1	Lot	
TOTAL FOR GROUP A						0%

Notes :

1. In case of any discrepancy in the Group Code, Item Code/Tag No. in this Break-up Sheet, the Group Code, Item Code/Tag No.specified in MR shall prevail.

2. Bidder to fill the percentage break-up against each line items and shall ensure that the total percentage of the Group should be 100%. The same to be submitted along with the Un-Priced Bid.

Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

NOTES:
Bidder shall furnish unit rate of following accessories also for addition/deletion purpose:

Bidder Name :	**0**

PRICE SCHEDULE (UNIT RATES FOR ADDITION/DELETION) (TO BE QUOTED BY THE BIDDER)

Sl. No.	**Item Description (As per MR)**	**UOM**	**Unit Rate (Rs)**
1.000	All analysers type sensor, detector and electronic modules	No.	
2.000	Sample tubing / lines	Meter	
3.000	Heat traced tubes	Meter	
4.000	Electrical tracer, for each type of analyser	Meter	
5.000	Ethernet cables	Meter	
6.000	Serial cables	Meter	
7.000	Communication cables	Meter	
8.000	Fibre Optic cables	Meter	
9.000	All power cables	Meter	
10.000	LED modules of Display board	No.	

Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

NOTES:

1.Vendor shall furnish an itemised list of recommended spare parts with unit prices for two years normal and continuous operation as per MR, required over and above the mandatory spares.

2. Price for spares for 2 year Normal Operation and Maintenance shall not be considered for evaluation and Purchaser / Owner reserves the right to select and order these spares separately. These prices shall be valid as indicated elsewhere in the bidding document.

3. In case bidder has quoted for any item but not indicated freight for that particular item, in such case freight for that particular item shall be considered included.

4. Bidder shall populate this sheet as per Material Requisition and replicate the same list without prices in the Unpriced Bid under Bid_Documents.xls. Bidder may add additional rows as necessary.

Bidder Name :	

PRICE SCHEDULE (FOR TWO YEARS OPERATION AND MAINTENANCE SPARES)

Sl. No.	Item Description	Quoted Currency (select from USD/EUR/GBP/JPY/INR)	Unit Price on FCA Airport of Exit (for foreign bidders) / FOT Despatch Point Basis (for indian sub-supplier)	Air Freight/ Road Transportation Charges (in % of Unit Price)	Item Name (Wherever necessary)	Units	Quantity
1		USD	0.00				1
2		USD	0.00				1
3		USD	0.00				1
4		USD	0.00				1
5		USD	0.00				1
6		USD	0.00				1
7		USD	0.00				1
8		USD	0.00				1
9		USD	0.00				1
10		USD	0.00				1
11		USD	0.00				1
12		USD	0.00				1
13		USD	0.00				1
14		USD	0.00				1
15		USD	0.00				1
16		USD	0.00				1
17		USD	0.00				1
18		USD	0.00				1
19		USD	0.00				1

DETAILS OF BUILT-IN-CIF VALUE OF IMPORT CONTENT (RAW MATERIALS)

Name of Work / Enquiry No.: SUPPLY OFAMBIENT AIR ANALYSER SYSTEMS FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-000-YA-MR-2666/544

FORMAT CIF/CD

NAME OF BIDDER : M/S

OFFER REFERENCE NO.:

ITEMWISE BREAK-UP OF BUILT-IN-CIF VALUE OF IMPORT CONTENT, ITEM DETAILS OF IMPORT CONTENT AND RATES OF IMPORTS DUTY CONSIDERED AND INCLUDED IN QUOTED FOT DESPATCH POINT PRICES UNDER PRICE SCHEDULE BoQ

NAME OF BIDDER:

	DESCRIPTION			Total MR item wise CIF value of Import Content included in quoted supply prices of MR item (In Rs)		DETAILS OF CUSTOME DUTY INCLUDED IN QUOTED SUPPLY PRICES OF MR ITEM		
S no.	For Item S. No. as per MR	Description of Imported items	Qty.	In Figures	In Words	CUSTOM TARIFF No.	BASIC CUSTOMS DUTY (%)	SOCIAL WELFARE SURCHARGE ON CUSTOM DUTY (%)
1								
2								
3								
4								
5								
6								
7								
8								

Note:

1	Bidder has to ensure that currency quoted in this format shall be INR only.
2	Un-priced copy shall be furnished exactly duplicate of price schedule duly indicating rate of duties except for CIF value.
3	The CIF Value(s) indicated by the vendor shall be deemed to be the maximum value(s) for the purpose of payment of variation in Basic Custom Duty and Customs Social Welfare Surcharge.
4	Bidder to consider input tax credit of IGST avilable at their end (in case of import of raw materials / component) in their prices; hence bidder shall not indicate GST in above table.

PETRONET LNG LIMITED

BIDDING DOCUMENT NO. JP/B862-000-YA-MR-2666/544

BIDDING DOCUMENT
FOR
AMBIENT AIR ANALYSER SYSTEMS
FOR

PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT

TECHNICAL SECTION

Prepared & Issued by:

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)

ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

MATERIAL REQUISITION (TOP SHEET)

ITEM DESCRIPTION :	AMBIENT AIR ANALYSER SYSTEMS		
ITEM CODE :	15FO	DESTINATION:	PLL DAHEJ, GUJARAT
ITEM CATEGORY :	II	DELIVERY PERIOD:	

REQUISITION NUMBER

(Always quote this Number given below as reference)

B862-000-YA-MR-2666	A
JOB NO. — UNIT/ AREA — MAIN COST — DOC. CODE — SR. NO.	REV

30-Apr-2026	16	51
DATE	DIVN.	DEPT.
	ORIGINATOR	

NOTES:

1. This page is a record of all the Revisions of this Requisition.
2. The nature of the Revision is briefly stated in the "Details" column below, the Requisition in its entirety shall be considered for contractual purposes.
3. Vendor shall note the Requisition category and shall submit his offer in line with the requirements included in attached 'Instructions to Bidders'.

REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY	DETAILS
A	30-Apr-2026	MOHAN KUMAR V	ARUPJYOTI SAIKIA	SREEDEVI KOMANDURI	Issued For Bids

This is a system generated approved document and does not require signature.

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S.No.	TAG NO./ ITEM CODE	DESCRIPTION	QUANTITY	GROUP
1		**Design, engineering, manufacture, procurement of materials and bought out components, assembly at shop, inspection, testing at manufacturer's works, packing, delivery, documentation as per the enclosed EIL standard specifications, special instructions to vendors, job specification, data sheets etc.**		
GROUP: A		**AAQMS and Display Board System**		
1.0001	AAQMS-1	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1 Lot	A
1.0002	AAQMS-2	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1 Lot	A
1.0003	AAQMS-3	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1 Lot	A
1.0004	AAQMS-4	AAQMS with Analysers, Shelters, HVAC, UPS & Other System Components	1 Lot	A
1.0005	DISPLAY-1	Display Board System with UPS, Data Transmission Devices & Other System Components	1 Lot	A
1.0006	DISPLAY-2	Display Board System with UPS, Data Transmission Devices & Other System Components	1 Lot	A
1.0007	DISPLAY-3	Display Board System with UPS, Data Transmission Devices & Other System Components	1 Lot	A
2		**Unloading, handling, transportation to store and from store to work site, storage at site, assembly at site, installation, testing, pre-commissioning, painting, insulation, commissioning, performance guarantee run, handing over to client and other field works including civil-structural work and supply of commissioning spares for the following,as per the enclosed EIL standard specifications, special instructions to vendors, job specification, data sheets etc.**		
GROUP: A		**AAQMS and Display Board System**		
2.0001	INST-A	For Group A	1 Lot	A
3		**Transportation for the following as per the enclosed EIL standard specifications, special instructions to vendors, job specification, data sheet etc.**		
GROUP: A		**AAQMS and Display Board System**		
3.0001	TP-A	For Group A	1 Lot	A
4		**Supply of Mandatory Spares as per enclosed list / special instructions to vendor.**		
GROUP: A		**AAQMS and Display Board System**		
4.0001	MS-A	For Group A	1 Lot	A
5		**Supply of two years operation and Maintenance Spares, as per enclosed special instructions to vendor.**		
6		**Unit Rates**		
6.0001	6.0001	Unit Rates of items for addition / deletion purpose, as per the special instructions to vendor.	1 Lot	
11		**Training Charges at Site**		
GROUP: A		**AAQMS and Display Board System**		
11.0001	TR-A	For Group A	1 /diem rate	A

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S.No.	TAG NO./ ITEM CODE	DESCRIPTION	QUANTITY	GROUP
12	**PWAMC- Post Warranty Annual Maintenance Contract (Comprehensive) as per enclosed special instructions to vendors of this MR.**			
GROUP: A	**AAQMS and Display Board System**			
12.0001	PWAMC-A	For Group A	1 Lot	A
20	**Pre-commissioning, commissioning, site acceptance test, trial run, handing over the entire system to client for the following as per the enclosed EIL Standard Specifications, Special instructions to vendor, Scope of works, Job specifications, Datasheets, Drawings, etc. and other codes and standards attached or referred in the MR.**			
GROUP: A	**AAQMS and Display Board System**			
20.0001	PC-A	For Group A	1 Lot	A

NOTES:

Vendors shall quote prices against these items in their price schedule.
Vendor to note that the numbers given in square '[]' and curly '{}' brackets are not for their use and meant for store purpose only.
Items shall be tagged as per main equipment Tag No. only.

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LIST OF ATTACHMENTS

S.No.	DOCUMENT TITLE	DOCUMENT NO.	REV	DATE	SHEETS
1	Vendor Data Requirement	B862-000-16-51-VDR-2666	A	30-Apr-2026	4
2	Special Instruction to Vendor	B862-000-16-51-SIV-2666	A	30-Apr-2026	11
3	Technical Questionnaire	B862-000-16-51-TQS-2666	A	30-Apr-2026	3
4	Scope of Works	B862-000-YA-SOW-2666	A	30-Apr-2026	7
5	Instrumentation Job Specification for AAQMS	B862-000-16-51-SP-2666	A	30-Apr-2026	17
6	Technical Specifications of Analysers required for AAQMS	B862-000-17-42-SP-1001	A	15-Apr-2026	6
7	Schematics & Layout drawings for AAQMS	B862-000-16-51-SK-2666	A	30-Apr-2026	3
8	Overall Plot Plan	B862-000-81-45-00001	G	10-Mar-2026	1
9	Callibration Gas Requirements & Utility Consumption Format	B862-000-16-51-OD-2666	A	30-Apr-2026	4
10	Vendor List	B862-000-16-51-VL-2666	A	30-Apr-2026	9
11	Compliance Format	B862-000-16-51-CF-2666	A	30-Apr-2026	2
12	Responsibility Definition Chart for AAQMS	B862-000-16-51-RC-2666	A	30-Apr-2026	3
13	Logistic Support Format	B862-000-16-51-LSF-2666	A	30-Apr-2026	5
14	Standard specification for analyser shelter	6-52-0087	2	10-May-2022	17
15	Standard specification for process stream analyser	6-52-0035	6	27-Feb-2023	25
16	ITP for analyser shelter	6-81-2087	0	16-Jun-2020	11
17	Inspection and test plan for process stream analysers	6-81-2035	4	22-May-2020	8
18	Specification for quality management system requirements from bidders	6-78-0001	3	29-Sep-2025	7
19	Specification for documentation requirements from suppliers (Including Annexures)	6-78-0003	3	29-Sep-2025	11
20	Standard specification for health, safety and environmental management at construction sites	6-82-0001	2	18-Apr-2023	105
21	Typical Earth Electrode in Earth Pit	7-51-0102	8	01-Nov-2021	1
22	Typical Earth Plate & fixing details	7-51-0103	7	01-Nov-2021	1
23	Safety Measures for Electrical Installation during construction	7-51-0332	4	07-Dec-2021	2

NOTES:

In case of any subsequent revision of MR or PR,only revised sheets of the attachments listed above shall be issued alongwith the revision.

GENERAL NOTES:

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VENDOR DATA REQUIREMENTS
FOR
AMBIENT AIR ANALYSER SYSTEMS

Rev. No.	Date	Purpose	Prepared by	Checked by	Approved by
A	30-APR-2026	Issued for Bids	MK	AJS	KS

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VENDOR DATA REQUIREMENTS

The following drawings/documents marked "✔" shall be furnished by the bidder.

S. NO.	DESCRIPTION	WITH BID	POST ORDER			REMARKS
			FOR REVIEW	FOR RECORD	WITH DATA BOOK (FINAL)	
1.	Vendor drawings/documents schedule		✔		✔	
2.	Sub-Vendor list	✔	✔		✔	
3.	Bill of material including list of components		✔		✔	
4.	Transportation time & Sampling calculations#	✔	✔		✔	
5.	Dimensional details with mounting details and model no.			✔	✔	
6.	Overall dimensional drawing of Analyser Shelter	✔	✔		✔	
7.	Analyser Panel / Cabinet GAD's (including mounting details)		✔		✔	
8.	Analyser Shelter Foundation Details		✔		✔	
9.	Analyser System Shelter General Arrangement drawing.		✔		✔	
10.	Schematic/probe detail including interconnection/termination & tie-in points#		✔		✔	
11.	Power supply distribution indicating all termination and tie-in points			✔	✔	
12.	Tubing/piping drawing showing Sampling components#		✔		✔	
13.	Utility consumption detail-power supply and other utilities	✔	✔		✔	
14.	Calibration gas cylinder details (including calculations)		✔		✔	
15.	System Grounding Details		✔		✔	
16.	Serial Interface mapping Details including MODBUS mapping			✔	✔	
17.	Testing and Inspection Procedures/Factory Acceptance Test (FAT) procedure		✔			
18.	Site Acceptance Test (SAT) Procedure		✔			
19.	Test certificates		✔		✔	
20.	Certificate from statutory body	✔		✔	✔	
21.	List of special instruments/tools needed for maintenance work on the analyser	✔		✔	✔	
22.	Catalogues including technical information in English Language	✔		✔	✔	
23.	Installation, operation and maintenance manuals			✔	✔	
24.	Consumables (calib. / fuel gas etc.) requirement in attached format		✔		✔	

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S. NO.	DESCRIPTION	WITH BID	POST ORDER			REMARKS
			FOR REVIEW	FOR RECORD	WITH DATA BOOK (FINAL)	
25.	List of start-up & commissioning spares and special tools & tackles list	✔		✔		
26.	List of recommended spares for 2 years normal operation	✔		✔		
27.	List of training courses and schedule			✔		
28.	Compliance Statement (Format attached)	✔		✔		
29.	Responsibility Definition (Format attached)	✔		✔		
30.	Logistics supp., Perf. guarantee & Capability Assess. Certificate (Format attached)	✔		✔		
31.	Filled up datasheets with Make/Model No. of all Analyser, Cables, HVAC, UPS, Analyser Shelter, display, networking components, other items as applicable for complete system		✔			
32.	Sample Handling System General Arrangement (Sample Tubing hook ups) & Probe details		✔		✔	
33.	Host system (DCS) Interfacing details		✔		✔	
34.	AAQMS System Configuration Diagram	✔	✔		✔	
35.	List of Mandatory spares		✔		✔	
36.	Junction Box details/wiring details			✔	✔	
37.	Parts list/assembly details		✔		✔	
38.	Calibration curve for each Analyser			✔	✔	
39.	HVAC Heat load calculations & dehumidified flow rate			✔	✔	
40.	HVAC Datasheets		✔		✔	
41.	HVAC Equipment Layouts			✔	✔	
42.	HVAC Equipment selection documentation and chemical filter details			✔	✔	
43.	HVAC SLD			✔	✔	
44.	HVAC Motor Datasheet		✔		✔	
45.	HVAC write-up instrumentation & automation		✔		✔	
46.	HVAC Installation & operation manual			✔	✔	
47.	GA drawings & datasheets in AutoCAD/ MS Excel Format (not scanned)			✔	✔	
48.	Final Documentation in CD/DVD			✔	✔	
49.	Cable Interconnection details/Termination Details			✔	✔	
50.	UPS and Non-UPS power supply distribution drawings for AAQMS System and Display			✔	✔	
51.	Display Board GA drawings and wiring diagrams, power supply distributions details			✔	✔	

Notes :

1. Documents, drawings with '#' symbol shall bear OEM's vetting before submission to EIL / purchaser.

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2. "TICK" denotes applicability.
3. Post order, drawing / document review shall commence only after approval of Document Control Index (DCI).
4. All post order documents shall be submitted / approved through EIL eDMS portal.
5. Refer - 6-78-0001: Specification for quality management system from Bidders.
6. Refer - 6-78-0003: Specification for documentation requirement from Suppliers.
7. All drawings & documents shall be submitted in A4 or A3 paper sizes. Documents in higher paper size shall be submitted in exceptional circumstances or as indicated in the MR/Tender.
8. Post order- The schedule of drawing / data submission shall be mutually agreed between EIL & the bidder / contractor / supplier during finalization of Document Control Index (DCI).
9. "@" indicates submission of documents to Inspection Agency.
10. Bill of Material shall form part of the respective drawing.
11. The review of the drawings shall be done as applicable, under the following review codes:
a) Review Code 1: Approved with No Comments.
b) Review Code 2: Proceed with manufacture/ fabrication as per commented document. Revised drawing required.
c) Review Code 3: Document not conforming to basic requirements. Resubmit for review.
d) Review Code R: Retained for records.
e) Review Code V: Void.
12. Review of the vendor drawings by EIL would be only to check compatibility with basic design and concepts and would in no way absolve the manufacturer/ fabricator of his responsibility to meet the applicable codes, specifications and statutory rules and regulations.
13. Any drawing/ document not indicated in the list above but required during erection, commissioning or for reconfiguration of the system shall also be supplied by the Vendor on demand.

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SPECIAL INSTRUCTIONS TO VENDOR

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued With MR	MK	AJS	KS

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PART-A (BIDDING INSTRUCTIONS):

A1. Bidders must follow the following guidelines while submitting their offer. Offers not complying with these guidelines shall be rejected without any intimation to the Bidder:

a) The Material Requisition (MR) specifications (i.e.) standard specifications and other attachments to this MR shall be fully complied with. No deviations of any type are acceptable in general.
b) No correspondence whatso ever shall be entered into or entertained after the bid submission.
c) The submission of prices by the bidder shall be construed to mean that they have confirmed compliance with all technical specifications of the corresponding item(s).
d) In case of any contradiction between this bidding instructions and any other documents attached with the MR, this bidding instruction shall govern, however it shall be obligatory on the bidder part to bring to the notice of the purchaser all such conflicts, wherein the purchase's decision shall be final.
e) Bidder to specifically note that all items covered in the MR shall be ordered together on one Bidder and evaluation shall be carried out on Bottom Line (lump sum) basis. Bidder must submit the Lump sum price, covering all the items, accessories, spares, testing, installation, civil works, commissioning, documentation and applicable statutory certification requirement as specified in the MR. No information / description, technical or non-technical, other than what is required as per price format shall be filled. Alternate quote / prices shall not be furnished by the bidder. AN OFFER WITH ALTERNATE QUOTE SHALL BE REJECTED.
f) All documentation submitted by the bidder including their quotation, catalogues, drawings, installation, operation and maintenance manuals, etc. shall be in English language only.

A2. Bidder shall be responsible for selecting the correct model numbers of the AAQMS Analysers, components, display board and all its accessories to meet the specification given in the MR. Any change found necessary at any later stage of the project to meet the specification covered under this MR, shall be carried out by the bidder without any cost and time implications.

A3. Bidder shall fill and furnish the following documents along with the offer: Bidder shall note that the offer will be evaluated on the basis of the following Documents only. Bidder shall submit the same with the offer:
a) Technical Compliance Statement along with technical questionnaire.
b) Duly signed and stamped scope of works document.
c) Duly signed and stamped Special instructions to vendor document.
d) Duly signed and stamped filled in datasheets attached with Technical Specifications for AAQMS (Doc No. Doc no. B862-000-17-42-SP-1001) with make / model of each item.
e) Filled in Utility Consumption List for AAQMS and Display board.
f) Filled in Logistic Support Certificate for AAQMS System, Display board, all system components & Major Bought Out items
g) Filled –in Calibration gas / carrier gas requirements for AAQMS Analysers.
h) AAQMS station layout including equipment, components, dimensions, connection/ size of required utility lines.
i) A flow scheme/sketch for each analyser indicating all components of sample handling system and all interconnection tubing etc. Bidder to furnish legend for each of components in flow scheme.
j) Un-priced bid (without prices) as per the RFQ format.

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However, Bidder shall ensure submission of all documents with the proposal and after award of contract, as per VDR of the MR.

A4. Bidder shall submit the 'Technical Questionnaire' in this M.R. duly filled in along with the offer. Answers to the contents of this Technical Questionnaire shall be unambiguous i.e. 'yes', 'no' or the required data/ information. An offer without the filled-in Technical Questionnaire or with vague, non-committal replies or referenced reply to some catalogue, etc. without specific page and paragraph No. shall be considered incomplete and is liable for rejection.

A5. MUST COMPLY REQUIREMENTS:

a) Bidder must indicate their contact person; email ID, fax number, telephone number and postal address in their offer.
b) Offer must be complete in all respects complying fully with the MR requirements without exception. No price change, whatsoever, shall be allowed to the bidder after submission of bid even if it results from any technical clarification.
c) Any price changes subsequent to the submission of the offer because of any technical query or any other reason attributable to the bidder may lead to rejection of the offer.
d) Technical queries, if necessary, shall be forwarded either in email or by fax. Bidder shall be allowed to forward their replies either by email or by fax, addressed directly to purchase department (addressed to the Purchase department from where the enquiry is issued) indicating the enquiry number in each of such correspondence.
e) Bidder to note that a pre-bid meeting shall be held in which bidder can seek any clarification/ confirmation (if required). Bidder shall ensure that this meeting is attended by both technical and commercial personnel of the bidder who should have thoroughly scrutinized the MR beforehand so that all issues are finally resolved in this meeting. Deviations on technical requirements shall not be entertained. In case bidder has any valid technical reason, bidder must highlight and discuss the same as part of pre-bid meeting itself.
f) Offered models shall be accompanied by detailed technical catalogues in English. An offer without catalogues shall be considered incomplete and is liable for rejection.
g) Bidder to note that delivery will be reckoned from the date of order placement. The following documents are to be submitted within 2 weeks from the date of order placement for timely release of purchase requisition (PR):
   - Filled-in datasheets
   - List of mandatory spares (shall be prepared group wise with details of item description, model/ part No, quantity as a minimum).

   Purchaser shall not be responsible for any delay in release of PR due to late submission of the above-mentioned documents and any resulting delay in delivery of the items shall be in bidder's account.
h) All documentation submitted by the bidder including their quotation, catalogues, drawings, installation, operation and maintenance manuals etc., shall be in English language only.

A6. Bidder’s quotation shall include detailed specification sheets for each item which shall provide information regarding type, construction materials, sizing code, size and rating, operating pressure, spring range etc. and any other valve accessories. The material specifications and units of measurement for various items in vendor’s specification sheets shall be to the same standards as those indicated in purchaser’s data sheets.

A7. This Special Instructions to Vendor (SIV) together with Scope of Works, Standard Specification for Process Stream Analysers (Doc No. 6-52-0035), Standard Specification for analyser shelter (Doc No. 6-52-0087), Technical Specifications for AAQMS (Doc No. B862-

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000-17-42-SP-1001), Instrument Job spec for AAQMS (B862-000-16-51-SP-2666) and all other documents attached with the MR defines the minimum requirements of specified AAQMS designed for reliable and effective analysis as indicated in this MR.

A8. Owner / EIL reserve the right to assess the capability and capacity of the bidder for execution of the project. Owner / EIL also reserve their right to reject any offer received at its discretion without assigning any reason whatsoever.

A9. In the event of any conflict between Special instructions to vendor, Standard specifications, statutory regulations, related codes and standards etc. the following order of priority shall govern.

a) Statutory regulations.
b) Technical Specifications for AAQMS and Special instructions to vendor.
c) Standard Specifications.
d) Codes & Standards.

However, it shall be obligatory on the Bidder's part to bring to the notice of the Purchaser all such conflicts, wherein the purchaser's/ owner's decision shall be final and shall be followed by the bidder.

A10. Acceptance Criteria:

a) Items with prototype designs shall not be offered by the bidder. For AAQMS system, analysers shall be EPA / TUV or equivalent approved.
b) In case at any stage, it is found that the offered models of items are not meeting the MR requirements, bidder shall replace these items without any time or cost implications.
c) Bidder and analyser manufacturer shall stand guarantee for the performance of all the offered make/model of AAQMS analysers and display board.
d) Bidder to note that any deviation on scope of work shall not be acceptable and shall lead to the rejection of complete offer without any intimation.
e) Bidder shall furnish without fail with the offer all required information as mentioned in the Vendor Data Requirement attached with the MR for each of the offered AAQMS analysers and display board. Non submission of the required information may lead to rejection of the offer without any intimation.

PART-B (JOB SPECIFIC REQUIREMENTS):

B1. The AAQMS Systems (AAQMS-1, AAQMS-2, AAQMS-3 & AAQMS-4) complete with individual analyzer shelter, calibration gas cylinders and multi gas calibrators, UPS etc. and display board (3 No's) covered in the MR are for the ambient air quality monitoring system of PDH-PP Plant with Ethane Propane Import Facility at Dahej Petrochemical Complex of M/s PLL.

B2. Bidder is required to furnish copies of technical literature / catalogues, for all items, in English, along with the offer.

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B3. Common analyser, if available as a standard manufacturer's design meeting MR specifications and PTR requirements shall be provided by the bidder for the following:

i. NO-NO2-NOx-NH3 Analysers

ii. H2S and SO2 Analysers

In-case, common analysers are not available for the above-mentioned analyser type, separate analyser type can be provided by the bidder.

B4. Bidder shall ensure that complete Model No. and decoding details elaborating the Part number, Serial number, etc. are provided for the System Components and accessories offered by them during design phase. Also, these details to be furnished in a separate template at a later date as per PLL request w.r.t Purchaser's SAP requirement.

B5. The analysers shall be supplied in pre-assembled, pre-tubed and pre-wired condition complete with sample handling system duly installed in respective self-standing type standing cabinets (floor mounted) in ready to commission condition. Site activities shall be kept as minimum.

B6. Bidder shall furnish bill of material for AAQMS System and display board during detail engineering. Bidder shall be fully responsible for providing all necessary items / accessories to meet the functional and operational requirements as specified in this MR. Any additional hardware or software found necessary at a later date to meet MR requirements shall be supplied by bidder without any time and price implications.

B7. AAQMS Analyzers shall be supplied as pre-calibrated from bidder's works.

B8. Bidder shall supply OFC cables as per the following cable lengths specified:

a) Between Gate House-3 Building and display board located near Gate house-3 = 350 meters (Approx)

b) Between Gate House-2 Building and display board located near Gate house-2 = 350 meters (Approx)

c) Between Main Gate House (Extension) and display board located near Main Gate = 350 meters (Approx)

B9. Analyser Shelters for AAQMS System:

Four (4) numbers Analyser shelters with HVAC System for AAQMS-1, AAQMS-2, AAQMS-3 & AAQMS-4 shall be provided by the bidder as per the Standard Specification for analyser shelter (Doc No. 6-52-0087) attached with the MR. For material of construction (MOC), bidder shall refer Standard Specification for analyser shelter (Doc No. 6-52-0087) attached with the MR.

All civil construction works related to AAQMS including making of civil foundations and structural supports for bidder supplied items shall be included in the scope of bidder.

MCTs (Multi Cable Transit) for cable entry to AAQMS Shelters including MCT Frames, Blocks, Stay-plates, packing etc. shall be provided by the bidder. All Cabling / Wiring/ tubing inside the analyzer shelter shall be in either in GI Conduits or FRP Cable trays only.

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Tentative location sketch for locations of AAQMS Shelters shall be as per plot plan attached with the MR. Accordingly, the bidder shall comply with all the following conditions mentioned below given regarding the installation of the AAQMS unit.

The unit shall be installed only at the place/position specified by the Site Engineer of PLL/EIL. No damages should be caused to the structures/premises due to the installation of the unit.

The premises of the AAQMS Monitoring stations shall be maintained in a clean and neat manner after the installation and commissioning meeting the HSE requirements.

All analyzers shall be connected to Ethernet network switch for further connectivity with redundant blind data loggers (By others) for data transfer to CPCB/SPCB and DCS in MCR and display board data transmission device located at Gate house building/s (as per below details) through OFC cable (By others). Ethernet hub (redundant) along with required RS232/RS485 to Ethernet converters, Ethernet to OFC converters/ LIUs, patch panel as required shall be by bidder. Bidder to refer drawing: Indicative configuration schematic for AAQMS B862-000-16-51-SK-2666.

- Display-1 is located near Main Gate and Display board transmission device shall be located in Main Gate House Building (Extended).
- Display-2 is located near Gate House-2 and Display board transmission device shall be located in Gate House-2.
- Display-3 is located near Gate House-3 and Display board transmission device shall be located in Gate House-3 Building.

Calibration gas cylinders shall be kept outside the AAQMS shelters with proper exhaust facility.

All lights of AAQMS shelters shall be LED type and shall be powered from shelter.

Earthing for complete AAQMS System including earth pit, all hardware including GI / Copper earthing strips, earthing cables, lugs etc. are in bidder's scope. Bidder shall refer electrical standards for earth pit attached with MR.

B10. Furniture for four (4) number analyser shelters and Main Gate House (Extended), Gate House-2 and Gate House-3 Building shall be provided by the bidder for all the bidder supplied equipment (consoles, PCs, Printers, other bidder supplied items etc.).

B11. Electronic Display Board:

Three (3) no's of LED based electronic display board system with 240 VAC UPS power supply shall be provided by the bidder. Display Board with canopy located at Main gate House, Gate House-2 & Gate House-3 entrance area shall be provided by the bidder with connectivity with display board data transmission device through OFC cable.

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B12. Inspection and testing requirements:

All the items supplied / integrated by the bidder at his works shall be subject to inspection at bidder's works by Inspection Agency as per RFQ.

As a minimum, Inspection Test plan for Process Stream Analyzers (6-81-2035) and Standard Specification for analyser shelter (Doc No. 6-52-0087), Technical spec for AAQMS (B862-000-17-42-SP-1001), Instrumentation Job spec for AAQMS (B862-000-16-51-SP-2666) shall be adhered by the bidder.

B13. Bidder shall ensure that submission of all drawings / documents mentioned in VDR shall be soft copies through EIL EDMS portal only during detail engineering & no document shall be submitted through hard copies. However, as built document shall be submitted in hard copy along with soft copy.

B14. Bidder shall furnish soft copies of all the as-built drawings and documents in searchable formats.

B15. Warranty shall be provided by bidder for the offered AAQMS System and Display board as mentioned in commercial sections.

B16. Spare Parts, Calibration Kits and Consumables, special instruments or tools:

a) Start Up and Commissioning Spares:

The recommended start up and commissioning spares shall be provided by bidder and Price for same shall be included in the lump sum price by the bidder. Bidder shall also refer standard specification for Process stream Analyzer (6-52-0035) cl. 1.2.6.d, the start-up and commissioning spares listed there (as applicable) for AAQMS Analyzers shall also be offered as a minimum by the bidder. List of the same shall be with Make, Model Number, Part Number & Detailed Description furnished by bidder in an excel file.

b) Reference / Calibration kits and Consumables:

For AAQMS analyzers, bidder shall provide the Reference / Calibration kits and Consumables (as applicable) for the offered analyzer tags as per Standard Specification for Process Stream Analyzers (6-52-0035) cl. 1.2.6 (a), (b) and (c). Price for the same shall be included by the bidder in the lump sum price. Bidder shall supply all consumables as per Bidder's recommendation required during start up, commissioning and for a period till completion of warranty period for trouble free operation. Minimum list of consumable items are specified in Instrument job spec for AAQMS B862-00016-51-SP-2666. Quantity to be finalized by bidder based on the recommended usage and bidder's experience. List of consumables to be furnished with the offer. Any additional consumables required over and above the list furnished by bidder for the specified period shall be supplied by bidder without any price implications. A4 printer papers and printer cartridges for six months operation shall be supplied by the contractor.

c) Special instrument or tools:

Bidder shall supply any special instrument or tools needed for testing, calibration and maintenance (including any low range flow meters that might be required for flow adjustments) of offered AAQMS analyzer as per Standard Specification 6-52-0035 cl. 1.2.6.e) for other analyzers and furnish the list for the same along with the offer. Price for

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the same shall be included by the bidder in the lump sum price. If at any stage it is observed that any additional special tools are required for the AAQMS analyzers, the same shall be provided, without any cost and time implication, by the bidder.

d) Recommended spare parts for 2 Years Operation & Maintenance:

Bidder shall quote separately for spare parts for 2 years normal operation as per clause no. 1.2.6.g) of Standard specification for Process stream Analyzers, (6-52-0035) and furnish the list for the same along with the offer for AAQMS system and display board. In case additional spare parts for 2 years normal operation are recommended by bidder for AAQMS and Display board, the same to be also included by bidder in the list for recommended spare parts for 2 years normal operation.

e) Mandatory Spares:

Following mandatory spares (as applicable for system supplied) shall also be included as a minimum by the bidder. The price of the same shall be provided separately by bidder and same shall be considered for evaluation.

i) Electronic module/cards: 5% or minimum 1 no of each type
ii) Temperature controller: 10% or minimum 1 no of each type
iii) Power supply module/cards: 5% or minimum 1 no of each type
iv) Flow meter: 10% or minimum 1 no of each type
v) Solenoid valve: 10% or minimum 2 no of each type
vi) Pressure regulator: 10% or minimum 1 no of each type
vii) Local indicator: 10% or minimum 1 no of each type
viii) Tubes: 10% of each type
ix) Tube Fittings: 10% or min. 5 numbers each type
x) Fan assembly: 10% or minimum 1 no of each type
xi) Sample cell: 10% or minimum 1 no of each type
xii) Detector / Sensors / sensing elements / detectors / bulbs / repair kits etc.: 10% or minimum 2 no of each type
xiii) Stream switching valve: 10% or minimum 1 no of each type
xiv) UV/IR source lamp: 10% or minimum 1 no of each type
xv) Set of O-rings, Gaskets: 10% or minimum 10 no.'s of O-rings/Gaskets, of each type
xvi) Set of fuses: Minimum 10 fuses of each type for higher ratings (more than 2.5A), minimum 50 no.'s of fuses of each type for rating up to 2.5A.
xvii) Communication System Components: 10% or minimum 2 Nos. (whichever is higher) of communication system components such as hubs, ethernet switches, routers, converters (like FO to TCP/IP, RS485 to FO etc.), network switches, media converters, firewalls, LIU, patch chords, pig tails, lamps for large display system, etc.
xviii) Sample handling components like filters, special DP gauges, regulators, coolers, rotameters, pressure relief valves, NRV, calibration gas and zero gas filled cylinders of all required compositions etc. shall be considered in mandatory spare list for each analyser: 10% (subject to minimum 01) of each type / model / make.
xix) Special or Proprietary Cables (if applicable): 100% or 100 meters (whichever is lesser) of each type
xx) Sensors / sensing elements / detectors / bulbs / repair kits etc.

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Notes :

- Mandatory Spares wherever specified with 5%/10% or minimum numbers, bidder shall supply whichever is higher.
- Above-mentioned mandatory spares list defines the minimum requirement. Additional items as recommended by manufacturer if any shall also be considered.
- Rounded-up figure to be considered wherever % is specified.
- The word 'TYPE' means the Make, Model no., Type, Range, Size/ Length, Rating, Material as applicable.

B17. Training:

Bidder shall provide training of owner personnel for configuration, troubleshooting and maintenance of offered ambient air quality monitoring system and LED based display board. Bidder shall furnish the outline of each course including course contents and duration, which shall be customized for the supplied Analyzer. Bidder shall provide training course content including the following as a minimum along with the bid:

a) Operating personnel.

b) Component level maintenance training

c) Software maintenance training

d) Schedule of training at the user's site.

The training shall be provided at site as per the following details for AAQMS:

a) Training at Site: Training of 2 batches of total 2 weeks (1 week for each batch of 4 to 7 persons)

Training charges shall not be included in the base price quoted by bidder and per diem charges of supplier's personnel for providing the above-mentioned training to Owner's personnel at site shall be quoted separately as per RFQ. Bidders shall include all costs and expenditures towards deputation of supplier's personnel at site in the quoted price. Price for the same shall be considered for evaluation and ordering. Ordering of training shall be as per actual requirement of owner.

B18. Comprehensive Post Warranty Annual Maintenance Contract (CPWAMC):

a) The Bidder shall provide 3 years Annual Maintenance Service Contract for the complete AAQMS with Analyser Shelter & all associated components (including consumables) as per MR including HVAC system.
b) AMC shall start immediately after expiry of the warranty period or successful SAT, whichever is later.
c) The offer for AMC shall be given year-wise.
d) The contract shall include travel, boarding & lodging of service engineer. Service engineer shall accompany with required tools & tackles.
e) Bidder to note that Annual Manual Service Contract shall be evaluated and considered for cost evaluation.
f) In the event of any malfunction of the system hardware/system software, experienced service engineer shall be made available at site within 24 hours on the receipt of such information from Purchaser.

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g) Purchaser personnel will work on system day-to-day basis and wherever possible, Purchaser shall inform the type of failure of hardware/ software to Bidder based on diagnostic available with the system. However, Bidder shall be fully responsible to attend and rectify the root cause and the failure within 48 hrs.
h) Bidder shall utilize the spare modules available with Purchaser if necessary and available with Purchaser at site, which are part of mandatory spares supplied with system as per this requisition.
i) Bidder shall maintain a record of all faults during post warranty period.
j) Manhour service rates to be provided for 5 years.
k) Following services shall be carried out during AMC period:-

i) Periodic Maintenance

Site visits, minimum four (4) times in a year (total days expected 18 in a year), schedule of visits to be discussed and finalized jointly between Bidder and client after placement of order/ delivery. It shall include, inspection of general healthiness of the system, study and advice on daily maintenance, inspection of Analysers, if any problem is reported, running of test programs, on-line servicing and solving reported problems. Analysers shall be checked on-line. However, one of these site visits in a year shall be during planned shutdown, for which the Purchaser will inform the Bidder one month in advance for shutdown dates. It shall include complete overhaul of the analysers, environmental operating condition checks, calibration checks and detailed reporting.

ii) Software Maintenance/ Support

Bidder shall maintain the existing operating & application software for any debugging requirements to have consistent performance of the system.

iii) Emergency Service

In the event of any malfunction of the AAQMS hardware/ software during this period, Service Engineer must report at site within 24 hrs. of report of failure. The system must be brought back within 24 hours after reporting at site.

NOTES

1. Bidder shall note that while carrying out the Post Warranty Maintenance Contract activities, Purchaser's engineers shall associate with the Bidder. On job training of these associated engineers shall be covered under this scope.
2. This shall include all items being supplied by Bidder, including any bought out items but not limited to the following:
   a) Labour, at no additional cost, to repair any system devices.
   b) Labour, at no additional cost, to provide tests, and adjustment to system devices.

B19. For AAQMS system, Bidder shall provide unit price for following items for addition/ deletion purpose:

i) All analysers type sensor, detector and electronic modules.
ii) Sample tubing / lines
iii) Heat traced tubes
iv) Electrical tracer, for each type of analyser
v) Ethernet cables
vi) Serial cables
vii) Communication cables
viii) Fibre Optic cables
ix) All power cables
x) LED modules of Display board

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Bidder to note that these unit rates are for addition / deletion purpose only and the required quantity for each item shall be included in the base price by the bidder.

B20. Site Survey: Bidder shall conduct site survey post order. In-case any additional information is required by the bidder for carrying out detailed engineering activities, same shall be collected during site survey by the bidder.

A plot plan with AAQMS locations has been attached with the MR. The exact cable route/ methodology to be followed are to be decided by successful BIDDER depending on local site conditions. BIDDER has to physically survey the actual site conditions to assess the actual cable route. BIDDER is required to submit a drawing showing the proposed cable route plan before actual work commencement for approval by site Engineer.

B21. Utilities:

a) Owner will supply 415 VAC Non-UPS power supply feeder at one point near each of the AAQMS Shelter & 240 V AC Non-UPS power supply feeder at one point near each of the display board and at Main gate house, Gate house-2 & Gate house-3. Further distribution of power to each components/equipment supplied by bidder including any required power/voltage conversions along with all required accessories and cables are in bidder's scope including distribution boxes, terminations, cabling etc. Any power/voltage conversions shall use redundant PSU's with independent upstream and downstream isolation facilities followed by diode O-ring units.

b) Bidder shall supply UPS and converter & other necessary accessories for bidder supplied items.

c) All incoming power cables shall be terminated by bidder onto power supply junction boxes (separate junction boxes for each type of power supplies). Supply and installation of the junction boxes shall be in bidder's scope. The incoming purchaser's cable details will be given by owner during detailed engineering.

d) Telephone instrument connectivity with MCR from both AAQMS shelters including patch card, LIU, POE switch and other required termination at both ends as necessary

e) Any other utility, if required, shall be arranged and provided by the bidder for the AAQMS System and Display board.

B22. All System components shall be supplied by Bidder based on EIL approved Vendor list attached with MR. In case, any item Vendor list not attached, prior approval from EIL/PLL shall be taken during design phase.

B23. SITE CONDITIONS:

The instruments covered in the MR shall be suitable for unprotected installation in Hot, Humid and Corrosive environment. The site environmental conditions at Dahej, Gujarat are as follows:

Ambient temperature (Max/ Min.): 45°C/ 5°C

Relative Humidity: 90% @ ambient temperature.

Maximum rainfall: 125 mm for a period of 1 hour.

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TECHNICAL QUESTIONNAIRE

Job No: B862

Project: PDH PP Plant with Ethane and Propane handling facilities

Client: PETRONET LNG LIMITED (PLL)

Req. No.: B862-000-YA-MR-2666

Rev No.	Date	Purpose	Prepared By	Checked By	Approved By
A	30/Apr/2026	Issued For Bids	MOHAN KUMAR V	ARUPJYOTI SAIKIA	SREEDEVI KOMANDURI

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This questinnaire shall be duly filled in and submitted along with the unpriced sets of offers to avoid further queries and to ensure proper evaluation of your offer in time. If this is not compiled with, your offer is liable to be rejected.

ANSWER 'YES' 'NO' OR 'NOT APPLICABLE'

Sr No.	Description	Bidder's Response
1	Have you any deviations to the following: i) General Specifications (clausewise) ii) Special requirements (clausewise) iii) Instrument specifications indicated in the data sheets. iv) The scope of supply as indicated in the material requisition. If `yes' have you included the list of deviations? (If no deviations are furnished, it will be assumed that all the specifications and requirements of the subject requisition are complied with and no deviations whatever will be accepted after the placement of order.)	
2	Have you quoted for the spare parts including consumable items required for the startup and 2 years normal operation/maintenance of the Instruments/Equipments?	
3	Have you quoted for the mounting accessories, special calibration kits and equipments (complete with technical details) required if any, for the erection, commissioning and maintenance of the instruments?	
4	A) Have you enclosed the relevant technical catalogue/Literature in ENGLISH language including model decoding details, drawings etc. necessary for the evaluation of your offer? (NOTE: In case of line mounted instruments, viz. control valves, positive displacement meters, pressure relief valves etc., for all the lines quoted, relevant dimensional details required for the installation must be furnished along with the offer.) B) Have you confirmed that the documents required as per vendor data requirements will be supplied after the placement of order. C) If so, have you indicated the extra price applicable, if any?	
5	Have you furnished sizing, noise level calculations and certified capacity curves for the instruments, wherever applicable?	
6	Have you furnished, separately the Shop inspection charges, if any, for inspection at your works by EIL/Third party? (The details of the tests to be carried out on the instruments during shop inspection are to be furnished)	
7	Have you furnished the certificates from statutory bodies vis. BASEEFA, FM, CSA etc.for the Explosion proof construction / intrinsically safe design of the instruments, wherever specified?	
8	Have you confirmed that IBR certification in Form III(C) or equivalent certification from statutory bodies viz. Lloyds, Bureau veritas, TUV etc.will be furnished wherever specified?	
9	Have you indicated separately the installation and commissioning charges, in case the same are included in your scope of work?	
10	Have you furnished the estimated power / utility consumptions and special cable requirements, if any, for the instruments quoted?	
11	Have you furnished the customer reference list in India/Abroad.	

[ ] Deviation [ ] No Deviation Vendor Seal And Signature

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Notes:
If the answer is NO, then furnish reason thereof.

[] Deviation [] No Deviation Vendor Seal

[ ] Deviation [ ] No Deviation Vendor Seal And Signature

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SCOPE OF WORK

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued for Bids	MK	AJS	KS

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SL. NO.	DESCRIPTION	SCOPE	
		BIDDER	PURCHASER
1.	Design, engineering, procurement, manufacturing, supply, integration, factory acceptance testing of complete Ambient Air Quality Monitoring Systems (AAQMS) as per MR including:		
(a)	**AAQMS**: shall broadly include the following: i. Four (4) nos. of Analyser Shelters located at Four (4) AAQMS locations with HVAC units along with all analysers as per Analyser data sheets of Technical Specification of AAQMS, meteorological system/station (stand-alone) at one location, sample handling system with sample probes, Ethernet hub (redundant) along with required RS232/RS485 to Ethernet converters, Ethernet to OFC converters/ LIUs at each analyzer shelters, OFC converters/LIUs at Main gate house, Gate house-2 & Gate house-3, Display Board Transmission Device at Main gate house, Gate house-2 & Gate house-3, 3 No. of A4 Color Laser Printer (for Display Board Devices), cabinets/racks, furniture, online UPS (at seven (7) locations), OFC cable and all other accessories for the complete AAQMS system as per MR requirements. ii. Three (3) nos. of Display board system as per MR requirements. iii. One common laptop with necessary hardware/ cable & software for interface with analyzers at AAQMS Station #1, #2, #3 & #4 for monitoring and trouble shooting of analyzers. iv. Telephone instrument connectivity with MCR from all Four (4) AAQMS shelters including patch card, LIU, POE switch and other required termination at both ends as necessary. (Refer Annexure-I for bill of material for Major items)	X	-
(b)	UPS and accessories for 4 Nos. AAQMS stations and 3 No's Display Board Transmission Device with Display board system as per MR requirements.	X	-
(c)	Complete installation materials for Ambient Air Quality Monitoring System including:		
(i)	Pre-fabricated electrically heated tube & bare tubes as applicable between sample take off to Analyser station and sample return including supply of tube/ pipe fittings as necessary.	X	-
(ii)	Pipe and pipe fittings necessary for sample take-off and return connectivity	X	-
(iii)	Cables, cable glands and accessories for interconnection of equipment supplied by bidder/contractor.	X	-
(iv)	UPS Power supply unit, Junction boxes and power distribution boxes as necessary for power distribution/termination of the signals.	X	-
(v)	Pipes/ tube and pipe/ tube fittings necessary for utility distribution for bidder/contractor supplied equipment.	X	-
(vi)	FRP cable trays/conduits (as applicable) for cable/ tube routing within and outside AAQMS Shelters for the bidder/contractor supplied equipment/items.	X	-
(vii)	All necessary structural supports and civil works for installation of items supplied by bidder/contractor including cable trays, structural support as applicable for AAQMS Shelters and display board.	X	-

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SL. NO.	DESCRIPTION	SCOPE	
		BIDDER	PURCHASER
(viii)	MCT frames complete with insert blocks, spare blocks, stay plates, end packing etc. for the cable entry to analyser shelter of AAQMS.	X	-
(ix)	Installation material requirements for Display board systems.	X	-
(x)	Sun/rain protections canopy for display boards.	X	-
(xi)	MODBUS serial cable/ Ethernet cables within analyzer shelter and within gate house buildings.	X	-
(xii)	Redundant Fibre optic cables between Four (4) AAQMS Shelters and blind data logger in MCR including all associated necessary HDPE conduits, patch panel, suitable convertors, LIU, Network switch and power supply etc. at Shelter ends as required to make the communication operational and functional in all respects.	X (All accessories except FO cable; Refer Note-1)	X (FO cable only; Refer Note-1)
(xiii)	Redundant Fibre optic cables between Four (4) AAQMS Shelters and DCS in MCR including all associated necessary HDPE conduits, patch panel, suitable convertors, LIU, Network switch and power supply etc. at both ends as required to make the communication operational and functional in all respects.	X (All accessories except FO cable; Refer Note-1)	X (FO cable only; Refer Note-1)
(xiv)	Fibre optic cables between Gate House-3 Building and display board located near Gate house-3 including all associated necessary HDPE/PVC conduits, hardware, suitable convertors, LIU, Network switch and power supply etc. at both ends as required to make the communication operational and functional in all respects.	X (Note-1)	-
(xv)	Fibre optic cables between Gate House-2 Building and display board located near Gate house-2 including all associated necessary HDPE/PVC conduits, hardware, suitable convertors, LIU, Network switch and power supply etc. at both ends as required to make the communication operational and functional in all respects.	X (Note-1)	-
(xvi)	Fibre optic cables between Main Gate House (Extension) and display board located near Main Gate including all associated necessary HDPE/PVC conduits, hardware, suitable convertors, LIU, Network switch and power supply etc. at both ends as required to make the communication operational and functional in all respects.	X (Note-1)	-
(xvii)	Providing Power supply cable (415 VAC Non-UPS) at each AAQMS shelter at one point.	-	X (Note-1)
(xviii)	Providing Power supply cable (240 VAC Non-UPS) at one point near Display Board and Display Board Transmission Device at Main Gate House, Gate House-2 & Gate House-3.	-	X (Note-1)
(xix)	All type of furniture for ambient air quality analyser system in AAQMS shelters and at Main Gate House, Gate House-2 & Gate House-3 buildings for bidder supplied items.	X	-
(xx)	Supply of spares and consumables as per MR requirements: a) Mandatory spares. b) Consumables and Startup & commissioning spares.	X	-
(xxi)	Supply of special tools and test equipment required for testing, maintenance and calibration of system as per the MR specifications.	X	-
(xxii)	Redundant Fiber Optic interface to Purchaser's AMADAS from individual AAQMS Shelter.	X	-

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SL. NO.	DESCRIPTION	SCOPE	
		BIDDER	PURCHASER
(xxiii)	Any other material / hardware / software items not specifically listed but necessary for the installation of complete Ambient Air Quality Monitoring systems (including Display board systems).	X	-
(d)	Calibration/reference/ carrier/ fuel gas cylinders with tubes as applicable along with dual manifold and accessories	X	-
2.	Complete system packing, forwarding, transportation and storage at site of complete AAQMS systems including Display Board Transmission Devices, Display Board systems, Laser Printers, Furniture, Analyser cabinets/racks, including unloading of all equipment, keeping under safe custody at site and shifting of all items to designated site location of the plant as per MR requirements.	X	-
3.	Installation of complete AAQMS system at site including:		
(a)	(i) Analysers Racks/Cabinets complete with analysers and its accessories. (ii) Installation of Sample probes, Sample handling system, Sample conditioner wherever applicable. (iii) Installation of Display board (3 Nos) and UPS including supply & erection of structural supports for the Display and mounting of the same. (iv) Installation of calibration/reference/carrier/fuel gas cylinders with tubes and accessories (v) Installation of Shelters for AAQMS (4 No's) (vi) Installation of UPS for all AAQMS shelters. (vii) Installation of HVAC at all AAQMS shelters. (viii) Installation of Display Board Data Transmission Devices for 3 No's Displays.	X	-
(b)	Utility distribution to bidder/contractor supplied items.	X	-
(c)	Installation, termination, Laying, Glanding, Ferruling and interconnection of all cables and tubes for all bidder/contractor supplied items /equipment (through the cable routes provided by purchaser for routing of cables outside AAQMS stations).	X	-
(d)	Installation of all cabinets, junction boxes, power supply distribution boxes including those required for 415V AC Non-UPS and 240V AC Non-UPS.	X	-
(e)	Civil works including foundation, structural supports as required for all items supplied by bidder/contractor.	X	-
(f)	Opening of existing duct, trenching for FO cable/ serial cables to the DISPLAY units at Gate houses as required, and closing of the Duct after laying the cables	X	-
(g)	Any other activity necessary but not specifically listed for installation of complete ambient air quality monitoring system/Display board system.	X	-
4.	Factory Acceptance Test (FAT) of complete AAQMS System including Analysers in shelter, Display board systems as per MR.	X	-
5.	Supply and installation of system & equipment earthing with all hardware including GI / Copper earthing strips, earth pits and earthing cables, lugs etc. as required for the bidder/contractor's supplied items (like junction boxes, analysers, analyser shelter, cabinets/racks etc.). Number of earth pits for each location shall be	X	-

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SL. NO.	DESCRIPTION	SCOPE	
		BIDDER	PURCHASER
	designed to meet the respective OEM requirement.		
6.	Laying of armoured OFC cables between Gate House-3 Building and display board located near Gate house-3.	X	-
7.	Laying of armoured OFC cables between Gate House-2 Building and display board located near Gate house-2.	X	-
8.	Laying of armoured OFC cables between Main Gate House (Extension) and display board located near Main Gate.	X	-
9.	Field-testing, loop checking which shall include Pre-commissioning, commissioning of complete AAQMS Analysers and Display board systems. This includes coordination with various contractors, EIL/Owner/ Field Erection Contractors during above-mentioned activities.	X	-
10.	Two years recommended operation and maintenance spares for AAQMS Analysers and Display board systems in case ordered by Owner	X	-
11.	Site acceptance test (SAT) of complete system including generation of all reports as per pollution board requirements.	X	-
12.	Documentation and training of complete Ambient Air Quality Monitoring system and Display board systems as per the MR specifications.	X	-
13.	Warranty for Analysers of Ambient Air Quality Monitoring system (refer commercial section)	X	-
14.	Coordination with i. Owner ii. Other field contractors iii. CDSU/Blind Data Logger Supplier iv. DCS Supplier v. AMADAS Supplier	X	-
15.	3 years comprehensive post warranty annual maintenance contract of complete Ambient Air Quality Monitoring system.	X	-
16.	Any other item or/ and activity not listed/ indicated specifically but necessary for successful operation of Ambient Air Quality Monitoring system and Display board system.	X	-

Notes:

1. Also refer Indicative Configuration Schematic for AAQMS (B862-000-16-51-SK-2666 Sh. 1 & 2 of 3) and Layout for Analyser Shelter (B862-000-16-51-SK-2666, Sh. 3 of 3) attached with MR.

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ANNEXURE-I: BILL OF MATERIALS FOR MAJOR ITEMS

Brief Description	Qty. in Nos.
AAQM STATION –ANALYZER SHELTER	
Analyzer shelter for Continuous Ambient Air Quality Monitoring (AAQM) Station including sampling system, internal fittings, instrument racks, electrical and gas line fittings, tools (electrical & mechanical), etc.	4 Units
ONLINE UNINTERRUPTED POWER SUPPLY (UPS)	
Online UPS typical 5 kVA, capacity (Single Phase I/P & Single-phase O/P, with 02 hrs backup) at AAQMS stations	4 Units
Online UPS (Suitable capacity) for display boards (location Main Gate House, Gate House-2 & Gate House-3)	3 Units
CONTINOUS AMBIENT AIR QUALITY MONTORING ANALYSER / SYSTEM	
General Specification for all Analysers	
Sampling System	4 Units
19” Rack	Minimum 4 Units
CONTINOUS AMBIENT AIR QUALITY MONITORING ANALYSERS (GAS)	
Ambient SO_2-H_2S Analyser	4 Units
Ambient NO-NO_2-NOx-NH_3 Analyser	4 Units
Ambient CO, Analyser	4 Units
Ambient BTEX, Analyser	4 Units
VOC Analyser	4 Units
CONTINOUS AMBIENT AIR QUALITY MONITORING ANALYSERS (PARTICULATES)	
Continuous PM_{10} Monitoring Analyser (β-RAY) *	4 Units
Continuous $PM_{2.5}$ Monitoring Analyser (β-RAY) *	4 Units
*- In Case common analyzer for PM 10 and PM 2.5, then one unit each for analyzer shelter (total 4 units) to be furnished.	
MULTI CALIBRATOR	

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Brief Description	Qty. in Nos.
Multi Point Gas Calibration System	4 Units
Meteorological, Flow and Electronics Calibration	4 Units
METEOROLOGICAL SYSTEM (stand-alone)	
Meteorological System comprising of sensors for (A) Wind Speed, (B) Wind Direction, (C) Ambient Temperature, (D) Relative Humidity, (E) Solar Radiation & (F) Rainfall, mounted on (G) Telescopic Crank-up Meteorological Tower	1 Unit
MISCELLANEOUS ITEMS	
Common Laptop with necessary cable/ hardware & software for trouble shooting and maintenance of analyzers	1 Units
DISPLAY BOARD DATA TRANSMISSION DEVICE (Main Gate House, Gate House-2 & Gate House-3)	3 Units
DAY LIGHT AND NIGHT VISIBLE DATA DISPLAY SYSTEM WITH CANOPY (near Main Gate House, Gate House-2 & Gate House-3)	3 Units
Telephone instrument connectivity between AAQMS shelter and MCR including patch card, LIU, POE switch and other required termination at both ends as necessary	4 Units

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INSTRUMENTATION JOB SPECIFICATION

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued with MR	MK	AJS	KS

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1. GENERAL:

The Ambient Air Quality Monitoring System MR, consisting of: **AAQMS-1, AAQMS-2, AAQMS-3, AAQMS-4 and 3 No's Display Board System** shall be provided to PDH-PP Plant with Ethane Propane Import Facility at Dahej Petrochemical Complex of M/s PLL.

2. SYSTEM DESCRIPTION:

For all analysers in AAQMS stations (4 No's), the monitoring station shall be provided with stand alone analysers including facilities for auto calibration, span check with self diagnosis capabilities and failure alarms. The continuous analysers shall be microprocessor based having capabilities to perform these advanced functions. A common laptop with required software & hardware to be provided by bidder for monitoring, maintenance and troubleshooting of the AAQMS analyzers, meteorological sensors/ Instruments.

These specifications for the AAQMS (including Display Board system) are to be read in conjunction with "Technical Specifications of Analysers required for Ambient Air Quality Monitoring Stations" (Doc no. B862-000-17-42-SP-1001)

3. VENDOR'S SCOPE OF WORK:

Vendor's scope of supply and work shall include but not limited to the following:

a) Design, engineering, manufacturing and supply of all Analyser systems & Sample conditioning Systems, UPS and other items of the AAQMS.

b) Supply analyser Shelter & racks for analysers and accessories required for the systems

c) Shop testing and calibration, Factory acceptance Test of the complete systems.

d) Installation, field testing, calibration and commissioning of the complete system including sample & calibration tubing and items loose supplied during transportation.

e) Supply and installation of calibration gas cylinders along with their manifolds.

f) Packing, forwarding and transportation of complete System.

g) Documentation, training of owner personnel and Post warranty Annual maintenance contracts.

h) Supply of special tools and equipment required for testing, calibration and maintenance of the system.

i) Vendor shall provide all installation material including consumables to install the Analysers, sample conditioning systems and all other accessories to permit adjustments, calibration and maintenance.

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j) All civil construction jobs related to AAQMS including making of civil foundations and structural supports shall be included in the scope of vendor.

k) Any other item/ activity required to complete in all respect for successful operation for Ambient Air Quality Monitoring stations.

l) Supply of spares as specified in SIV.

m) Supply of consumables required for AAQMS system.

n) Vendor's scope shall include all the installation materials for the vendor supplied instruments / equipment like all types of cables including the power cables / special cables, cable trays / raceways, junction boxes (if required), cable glands / plugs, mounting accessories for the sampling hoods / sampling systems, tube/tube trays/fittings for the interconnection of the calibration / carrier / fuel gas cylinders with the analysers, power distribution box / cabinets for distributing power to individual analysers / sampling systems / stabilizers/ multipoint calibrators/ zero air generators etc., mounting accessories/rack to mount the calibration/carrier/fuel gas cylinders, switch boards etc.

o) Supply and installation of FO cables through HDPE conduits, Cable trays, buried trench as applicable.

For detailed scope of work, also refer B862-000-16-51-SOW-2666.

4. FUNCTIONAL REQUIREMENTS:

4.1 FIXED STATION FOR CONTINUOUS MONITORING OF SO2-H2S, NO-NO2-NOX-NH3, CO, BTEX, VOC, PM10, PM2.5 PARAMETERS AND METEOROLOGICAL DATA.

Each AAQMS stations shall consist of SO2-H2S analyser, NO-NO2-NOx-NH3 analyser, CO analyser, BTEX analyser, VOC analyser, PM_{10} analyser and $PM_{2.5}$ analyser, meteorological sensors (as applicable), network switches & converters, calibrators, calibration cylinders and zero gas generators.

Data from all AAQMS (1 to 4) shall be displayed at all 3 No's LED based display board.

All the equipment except display board system and its associated items shall be housed in shelter termed as AAQMS-1 to 4, which shall be located in safe area. Typical system configuration diagram for AAQMS-1 to 4 is indicated in the drawing no. B862-000-16-51-SK-2666 enclosed with the tender.

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Connectivity between following items through Fiber optic cable shall be in Vendor's scope:

a) Main Gate house and display board located near Main Gate House
b) Gate house-2 and display board located near Gate House-2
c) Gate house-3 and display board located near Gate House-3

4.2 SAMPLING SYSTEM:

The sampling system shall consist of all the necessary components, including sample probe, sample filters, sample pumps, pressure reducers, safety relief valves, moisture separators, flow regulators, flow meters, isolation valves etc. necessary to prepare the sample for proper analysis. Separate sample collection apparatus shall be used for collecting the samples for suspended particles and analysis of other gases in the atmosphere.

1) All components shall be sized and coupled so as to keep the sample volume to a minimum.
2) Calibration zero and span gas connections shall be provided for each analyser.
3) Sampling manifold shall be provided for each station.
4) The sampling systems shall have various sub-assemblies as required.
5) Analysers shall be vented to the atmosphere individually or through a common vent system.

4.3 CALIBRATION EQUIPMENT

1) 1 no. of multi-gas calibrator shall be provided in each AAQMS stations. This calibrator shall have the facility for automatic zero/ span calibration of all the analysers through gas cylinders. These calibrators shall also provide automatic multipoint calibration of all analysers once a week.
2) The Multi point calibrator shall have minimum 4 ports for connecting different cylinders. The Zero Air Generator (for zero calibration of individual analyzers and for purging the BTEX analyser) shall not use any heated oven for moisture separation.
3) Calibration gas cylinders with auxiliaries like adapters, regulators, pressure gauge etc. shall be supplied for span and zero calibration of the analysers.
4) Quantity of analyser calibration gas shall be sufficient for one-year continuous operation.
5) Quantity of analyser calibration gas shall be calculated based on the frequency of calibration, length and size of sample line and duration of calibration. Due importance shall be given to calibration during initial commissioning which requires more quantity of calibration. Calibration gas cylinders shall be supplied in two sets. One set of these cylinders shall be connected to the analyser and 2nd set of cylinders shall be supplied in 3 months after commissioning.

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6) All tubing between the cylinders and the analysers shall be complete and easily removable from either end.

4.4 PIPING AND TUBING:

1) All tubing runs shall be either horizontal or vertical, with 90° tubing bends. The tubing shall be run and arranged such that quick visual tracing is possible. All valves, gauges and flow meters must be visible and accessible.
2) All sample handling components shall be of 316 SS, as a minimum including isolation valves, instrument fittings, vent lines etc. and all tubing shall be of SS316L material as a minimum.
3) All tube fittings used for tubing shall be non-flare & double compression type.

4.5 AAQM STATION –ANALYZER SHELTER

4.5.1 AAQMS ANALYZER SHELTER

AAQMS Analyzer shelter (with HVAC system) shall be metallic and shall be as per analyzer shelter standard specification 6-52-0087 enclosed with the tender. Bidder shall also provide foundation for the AAQMS analyser shelter as per the specification, standards and other specifications enclosed elsewhere in the tender. Power supply of 415VAC, 3 Phase will be provided near the shelter by others and derivation to other level and distribution within shelter to all bidder supplied analysers, equipment etc. shall be by bidder including the supply of UPS. No other utility is envisaged.

Dimensions:

- Inside length: 4000 mm
- Inside width: 3000 mm
- Inside height: 2500 mm

Indicative dimension, also refer sketch B862-000-16-51-SK-2666 (Sheet 3 of 3)

4.5.2 STATION FURNISHING:

Following minimum items to be provided in each AAQMS station shelters

i) 19” racks.
ii) Fire extinguishers – 02 Nos. (Clean Agent – 2 KG each)
iii) Furniture: for all bidder supplied equipment
   a) Material - Furniture made of water-resistant laminated board
   b) Furniture shall include reputed make tables, desks, executive chairs, printer/ copier stands etc.
   c) Working table – Powdered coated MS frame size 1400 x 900 x 750 mm

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(w x d x h) and top 19 mm thickness Board- 2 no. per AAQMS station

d) Revolving tilting chair- 2 no. per AAQMS station

iv) Miscellaneous

a) The exhaust gases from the analyser should be collected and discharged by a common exhaust pipe and vented.

b) Folding aluminium ladder for roof access (Length as required with 1 feet width steps)

c) Sensor for measuring the inside temperature of the station and Display

d) Hygrometer for measurement of Humidity inside the station andDisplay

e) Mounting bracket for the ladder

f) No smoking stickers

g) Vacuum cleaner with minimum 100-watt power

h) Tool Kit having following tools:

- One screw driver set
- One Digital multi-meter (Philips, Micro or equivalent make)
- One box spanner set
- One D spanner set
- One watch maker set
- One Hammer set
- One precision screw driver set
- One pliers set
- One Tong tester
- One Soldering Iron with stand

i) One Emergency LED Cluster light

j) Suitable furniture / rack to be provided for UPS.

Following minimum items to be provided in each Gate house buildings (Total 3 No's : Main Gate House, Gate House-2 & Gate House-3):

i) Suitable furniture / rack to be provided for UPS

ii) Furniture: for all bidder supplied equipment (PC cum display board data transmission device, printer)

a) Material - Furniture made of water-resistant laminated board

b) Furniture shall include reputed make tables, desks, executive chairs, printer/ copier stands etc.

c) Working table – Powdered coated MS frame size 1400 x 900 x 750 mm (w x d x h) and top 19 mm thickness Board- 1 no. at Gate house building

d) Revolving tilting chair- 1 no. at Gate house building

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4.5.3 GAS DETECTOR

As shelter is to be installed in safe area, LEL Gas (HC) detectors, Flammable gas detection alarm (>20%) indicated in the following clauses in 6-52-0087 shall not be applicable for this project.

i) Cl.2.1.4

ii) Cl.2.3.6

iii) Cl.2.4.1

iv) Cl.2.4.2

4.6 ONLINE UNINTERRUPTED POWER SUPPLY (UPS)

ONLINE UPS (SINGLE PHASE I/P & SINGLE-PHASE O/P, WITH 02 HOURS BACKUP) FOR EACH AAQMS SHELTER (TOTAL 4 NO'S) AND EACH GATE HOUSES (TOTAL 3 NO'S): -

S.No.	Title	Description	Specification (Min. Requirements)
1.	Capacity	-	5.0 kVA (minimum), suitable Capacity to meet load requirement
2.	Technology	-	PWM using IGBT / MOSFETS
3.	Crest Factor	-	More than 3: 1
4.	Input	Voltage	230 V AC Voltage (To be derived from 415 VAC Non-UPS)
5.		Range	± 25% Frequency: 50 Hz ± 3%
6.	Output	Voltage	230 V AC
7.		Voltage regulation	± 1%
8.		Frequency	50 Hz
9.		Frequency regulation	± 0.01%
10.		Waveform	Pure sine wave
11.	Battery	Battery type	Sealed maintenance free
12.		Back up time	2 Hours at full load
13.		Battery Capacity	For required backup time
14.		Recharge time	5 hrs to 90% after complete discharge
15.	Distortion	-	Less than 1% on linear load
16.	Power factor	-	0.9 to 1
17.	Indicator	-	L.E.D. – Battery Charge, Load level, on Line, over load, on Battery, replace battery
18.	Alarm	-	Audible alarm for battery backup, battery low and fault
19.	Protections	Surge	Surge suppression meets BIS or International standard
20.		Overload	Fuse & current limited
21.		Short circuit	Fuse & current limited & Cut – off
22.		Battery low cut – off	No battery drain after cut – off
23.	Overload Capacity	-	110% for continuous load
24.	Efficiency	-	More than 90%
25.	Environment	Operating Temp.	0 – 50 C
26.		Operating Humidity	10% to 95% (Non-condensing) Audible
27.		Noise	Less than 45 db (at 1 meter)

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4.7 CONTINUOUS AMBIENT AIR QUALITY MONITORING

Refer doc. "Technical Specifications of Analysers required for Ambient Air Quality Monitoring Stations for PDH-PP Complex at PLL-Dahej" B862-000-17-42-SP-1001 for analyzer requirements and specifications.

Accessories to be provided for all Analysers:

i) Local digital indication required and shall be as indicated in datasheet. Graphical representation to be provided.
ii) Auto ranging provision is required.
iii) The necessary tubes and tube fittings as per requirement for sampling to be provided.
iv) Necessary rated pump for sample suction (if required).

4.8 The touch screen calibration of the display of all analysers shall be possible by user except PM10 and PM2.5.

4.9 If the offered analyzers uses internal air filter, an additional air filter shall be provided at the sample inlet to the analyzer.

4.10 All the offered analyzer shall have a feature of displaying the specific alarm / fault in the operating parameters like flow, pressure, temperature inside the analyzer. These alarms should have a provision to be acknowledged.

4.11 It shall be possible to monitor all the internal parameters (like flow, temp, pressure) of the analyzer and all the parameters shall be displayed in their engineering units rather than their sensor raw data.

4.12 Proper material selection shall be vendor's responsibility. However, vendor to note that minimum SS316 material shall be offered, unless otherwise specified.

4.13 All junction boxes and cable glands required for main incoming power supply, power distribution, signals junction boxes, warning panel, safety equipment items, required to be kept "power on" even on ventilation failure etc., shall be certified weather proof to IP 65.

4.14 Analysers shall be rugged and of proven design suitable for continuous operation in industrial environments. Vendor must select and design the complete system to ensure an uptime of minimum 95% after commissioning.

4.15 The principle of operation used shall be simple in design and shall avoid analytical complexity associated with development of information, which is extraneous to the application.

4.16 The design used shall provide maximum reliability, maximum on-line performance and minimum maintenance. Analyser/ Instrument shall be field proven. No prototype Analyser/ Instrument shall be supplied.

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4.17 All items shall be integrated at vendor/ manufacturers works in ready to commission condition except the sample tubing from sample takeoff.

4.18 Vendor to furnish a complete drawing indicating the complete analyser system from the sample take-off point to the sample disposal including sample-conditioning system (SCS), Electronics, cabinet, sample transportation/ fast loop/ return line etc. Complete detail of sample conditioning systems shall be furnished in the offer to ensure complete understanding of the application by Vendor. However, owner's approval shall be part of detail engineering as indicated in vendor data requirements.

4.19 Sample Transport Line (If applicable)

Vendor shall be responsible to size the fast loop (if required) and sample lines ensuring:

i) No deterioration of sample shall take place in the sample line.

ii) No condensation shall occur in the sample line.

iii) The transportation/Lag time specified is complied.

Vendor must provide transportation/lag time calculations for each analyser. The transportation time shall be as per analyser datasheets attached with tender.

4.20 In case heated sample tubing is required considering the process condition, the tubing shall be pre-fabricated type with electrical heating tracer. The details shall be provided by Vendor along with total power consumption.

4.21 Sample Handling System:

The sample handling systems shall conform to API RP-555. Sampling systems shall be designed to provide a clean representative sample that is appropriate for the analyzer. The basis for design is the sample composition and process conditions specified in the respective analyzer datasheets. Vendor shall provide a sample system sketch for each sample system. Vendor to ensure that all materials shall be suitable for sample stream content and Analyzer operation shall not be affected by or compensated for ambient or sample temperature fluctuations, or barometric or sample pressure changes. Also, Provisions shall be made for manual injection of a standard sample for calibration and checkout purposes.

4.22 The analyser system shall not be considered commissioned unless the operational / functional interface is established.

4.23 Telephone instrument connectivity with MCR from all four (4) AAQMS shelters including patch card, LIU, POE (Power over Ethernet) switch and other required termination at both ends as necessary shall be provided by Vendor.

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4.24 LED based Display board for Plant complex:

i) Selection of Equipment: The LED based electronic display board system shall be customized in view of the requirements and features provided by M/s PLL. Proper material selection for fulfilling the requirements of M/s PLL is bidder's responsibility.

ii) System configuration: Bidder to submit the schematic of the proposed system configuration indicating each offered items of LED based display board system.

iii) Item details: Bidder to submit the list of offered items and also the details (catalogue, make, model, specification etc.) of LED based display board system.

iv) Any construction activity w.r.t to AAQMS shall only be carried out by the bidder after valid permission from site in-charge / PLL. It is advised that all the support/ mounting arrangements shall be preferably pre- fabricated at vendor's works as per requirements of tender.

v) Display board shall have facility to display all AAQMS Data. Also, data regarding the ambient noise at the boundaries need to be displayed in the display board. All values for the same are to be manually entered.

vi) Detail Engineering: As part of detail engineering the following shall be carried out by the bidder:

a) Field side lay out drawing.
b) Complete system configuration details.
c) Complete wiring diagram.
d) Electrical Load calculation.
e) Dimensional details of the offered / supplied items.

vii) Dimensional details of the mounting arrangement of the offered/ supplied items of display board system shall be provided by the bidder.

viii) Physical verification: After the placement of order, as a part of detailed engineering, bidder shall conduct site survey and visit PLL's PDH-PP site for physical measurement, verification and inspection of the site within 10 days. Bidder shall take actual dimensional measurement for designing / supplying field devices / instruments with accessories like supports/ structures/ clamps for mounting the offered items. Before dispatching the material to PLL's PDH-PP site, Bidder shall prepare the complete engineering drawings / documents and shall submit the same to purchaser for approval. Only after the approval of vendor drawings / documents, material shall be dispatched to site by the bidder.

ix) Installation and Commissioning of supplied system: Installation and commissioning of the total AAQMS System and display board system are in bidder's scope. All civil construction works including making of civil foundations and structural supports for bidder supplied items shall be included in the scope of bidder.

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x) Factory acceptance test: FAT shall be conducted for the complete AAQMS System. A separate FAT for the Electronic based display board shall be conducted by the bidder at the OEM's factory so as to ensure that all operational requirements are met during detailed engineering.

xi) Painting of all items as per "Job Specification for Surface Preparation and Protective Coating" attached with MR shall be provided by the bidder. Reputed make Paint system shall be selected for industrial corrosive environment by the bidder.

xii) Power Supply: Bidder to note that Purchaser will provide One (1) no. 240V AC, 50Hz non-UPS power connection near each display board location at Main Gate House/Gate House-2/Gate House-3 entrance area. UPS with back-up time of 30 min shall be provided by bidder with suitable capacity to take care of the electrical loads required. Power distribution to all bidder supplied items is in bidder's scope. Bidder to provide necessary power distribution system with Isolation switches along with the supply. UPS System for display board in rooms/ cabin located in gate house shall be provided by the bidder.

xiii) Display Board Accessories: Bidder shall supply all the accessories required to complete the installation and functioning of the display board systems in all respects. Bidder to note that while commissioning the in line text of the display board may change subject to requirement of M/s PLL and hence bidder to bring sufficient stickers of letters (both case) / digits / symbols to accommodate those changes.

xiv) Site Acceptance Test (SAT): After successful commissioning of the AAQMS system, bidder shall conduct site acceptance test. After successful SAT only the complete AAQMS system shall be accepted by M/s PLL. The detail SAT format shall be prepared by the bidder and shall be submitted to M/s PLL for approval.

xv) Display board shall be mounted at suitable elevation from grade. Same shall be finalized during detailed engineering.

xvi) Refer Sl. No. 6 & 7 below for specification of LED based display board and data transmission device.

4.25 Utilities:

i) Owner shall supply 415/240 VAC non-UPS power at one point to each station, as follows:

- 415 VAC, 3 Phase power supply for each AAQMS stations 1 to 4
- 240 VAC non-UPS near each display board 1 to 3.

Vendor shall supply UPS and converter for vendor supplied items.

ii) Further distribution / conversion shall be in Vendor's scope including distribution boxes, terminations, cabling etc.

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iii) All incoming power cables shall be terminated by Vendor onto power supply junction boxes (separate junction boxes for each type of power supplies). Supply and installation of the junction boxes shall be in Vendor's scope. The incoming cable details will be given by owner during detailed engineering.

iv) Any other utility, if required, shall be arranged by the Vendor.

4.26 Solenoid valves considered for the sample handling system shall be weather proof to IP-67/ NEMA-4X and intrinsically safe, powered by 24 VDC & Class H Insulation.

4.27 All the equipment / accessories associated with Display boards including UPS, distribution boards, FO converters, LIU cards, controllers, etc. (as applicable), which shall be located in open area / public area shall be installed in an enclosure with lock & key arrangement and shall be weatherproof to IP 54.

4.28 All Cabling / Wiring inside the analyzer shelter shall be in Conduits only. Cable trays shall not be used.

4.29 Fiber Optic cable between Gate Houses and Displays shall be Single Mode & Armoured with minimum 6 fibers.

4.30 General Requirements (Cables, Junction Boxes, Cable Glands, Tubes, Tube Fittings etc.)

i) Bidder shall supply all the interconnecting cables, cable glands, tubes/ tube fittings etc. between the tap-off and the sample handling system, between sample handling system and analyser, between analyser and sample return lines to achieve proper functioning of analysers. Cables between electrode/ sensor and preamplifier/ transmitter unit shall be in Bidder's scope.

ii) All interconnecting cables shall be XLPE insulated, armoured with flame retardant PVC inner & outer sheath.

iii) Cable entries and cable gland sizes shall be in 1/2" NPTF for single pair and 1 ½" for multi-pair cables. All cable glands shall be double compression, Ex d certified and SS304 MOC with PVC hoods.

iv) All the cables shall be properly terminated in junction / terminal boxes. Flying leads are not acceptable.

v) All electrical components like junction boxes, cable glands etc. shall be weather proof to IP 65 and Ex d certified.

vi) Junction boxes (if required) shall be of die cast aluminium alloy (LM-6) body and shall have terminals suitable for accepting minimum 2.5 sq mm copper conductor for signal, alarm and control cables. 20% spare terminals shall be supplied in each junction box.

vii) Based on vendor's power requirement, the power cable shall be provided. JBs/cable entry size shall be considered accordingly.

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4.31 Laptop

Laptop with all the required software & hardware for configuration/ engg. & trouble shooting of AAQMS analyzers & analyzer shelter PLC (if applicable). Laptop shall be from reputed make with latest configuration. It shall be provided with all the accessories like connectors/ converters, interconnecting cables, charging adaptors, laptop bag etc. Also, laptop shall be suitable for working in field and certified for electrical area classification indicated elsewhere in the MR. All necessary software licenses shall be in the name of M/s PLL and valid for at least 3 years from data of commissioning.

5. MULTICALIBRATOR

Calibration system should provide for the calibration of the ambient air quality monitoring analysers (Gas).

5.1 MULTI POINT GAS CALIBRATION SYSTEM:

1. The Gas Calibration System should be capable to do the following:
   - i) Multipoint calibration using automatic dilution system for the calibration of SO2 – H2S, NO – NO2 – NOx – NH3, CO, VOC and BTEX analyser.
   - ii) Auto calibration (user selectable).
   - iii) Generate zero air of 99.9% purity (High Performance Zero Air Generator to be provided).
   - iv) Gas Phase Titration (GPT) with O3 generator having 100% converter efficiency for conversion of NO2 to NO.
2. System should be 19” rack mountable.
3. System should be DAS compatible for remote calibration from Central Server.

6. DISPLAY BOARD DATA TRANSMISSION DEVICE

For PDH-PP, PLL Dahej project, vendor shall use OFC (Optical fiber) cable for transmitting data from Display board data transmission device to Display board system. The supply and installation of all associated and necessary hardware, accessories like LIUs, Pig tail connectors, Couplers, Fiber Optic converters, Patch chords, LIU structured cabling etc. as required, at both ends of the OFC cables shall be in vendor scope.

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S. No.	Item Desc.	Specifications (Minimum requirements)
1.	PROCESSOR	Latest Processor and configuration Key board: Optical Keyboard same as OEM Mouse: Standard Optical Mouse same as OEM Monitor: 24" FULL HD LED Color Monitor with touch screen Optical Drive: DVD R/W 16X Drive, Internal HDD's: Min. 1TB SSD + HDD (Hybrid)
2.	Memory	16 GB DDR-III, 1066MHz
3.	Ports	a) One HDMI b) LAN Port for Ethernet Network Connection c) Minimum of 3 USB Port with support for USB 2.0 or USB 3.0. d) Port for connecting OFC cable from Display board data transmission device to Display Board. e) Port for connectivity for Purchaser's network for monitoring
4.	OS Support	Windows OS
5.	Communication Options	a) Wifi Communication – Wifi Hotspot enabled/ GPRS Comm. Enabled b) Communication to Display Board system through OFC
6.	Power Supply	Standard suitable power supply.
7.	Size	Mechanical Chassis Size not to exceed 9'' x 6''x 6'' with stand-alone tower/box.
8.	Operating Environment	Operating Temperature 0° C to +50° C Humidity upto 100%
9.	Device Support	05 Years
10.	Antivirus	It should be secured If Windows than life time antivirus should be there.
11.	General	Vendor will configure and deploy the communication mechanism. Complete manual of the device should be provided.
12	Accessories	01 Meter HDMI Cable
13.	Internet	Not applicable. Connectivity shall be through fiber optic cable from AAQMS server
14.	Display Board should show	Last data saved.
15.	Display board should show	Last updated time should be displayed
16	Software	The vendor is responsible to provide software which can download the data, Advertisements etc. store it and display on the Display Board seamlessly.

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7. DAY LIGHT & NIGHT VISIBLE DATA DISPLAY SYSTEM

LOCATION – Main Gate House, Gate House-2 & Gate House-3 (3 No's)

S. No.	Item Desc.	Specifications (Minimum requirements)
1.	Size of Display System (H X W) feet and Pixel	8 X 12 feet 20 mm (+/- 0.6 mm) pixel pitch, 2300 m2 minimum pixel Density
2.	Visibility Range	50 Meters (Day time)
3.	Brightness	8500 NIT or higher
4.	Display of Colour Elements	1Red, 1Green, 1Blue pixel
5.	Minimum Life span of the system	LED Life 100000 Hours
6.	Viewing angle	Viewing angle of 140° Horizontal/59° Vertical
7.	Operating and non-operating Temperature	15-55 ° C
8.	No of Color	281 trillion Colors, 256 brightness level dimming capability
9.	Video processing	24-bit Video processing, 100% Digital
10.	Diode Density	7000m2 (minimum)
11.	Scan rate and refresh frequency	Scan Ratio 1:1 and with minimum 20000 hz refresh frequency
12.	LED internal and External Cabinet type, Serviceability	Internal LED frame should be made of Aluminium and External cabinet should be factory made without pin holes, LED Display should be serviceable from front and back
13.	Color Temperature - Adjustable	4500 - 9000 K range
14.	Input Power Requirement/ Consumption	240 VAC, 50 Hz Power consumption 180 W (maximum) / m2
15.	Type	Discrete Diode
16.	Display Mounting	Structure based upon location. Uni Pole or hanging
17.	Canopy	Required (FRP or SS MOC is also acceptable)
17.	General	The system should also have the facility to display the environmental picture through video camera/vcr/cd player etc. for public awareness.
18.	Power Cable Laying	Depending upon location, cabling is to be done by the vendor
19.	Device at station to pick up data and transmit it to LED	For connectivity from Display board Transmission device to Display board system, vendor shall supply OFC cables between these locations including all associated necessary hardware, suitable convertors, LIU, Network switch and power supply etc. at both ends as required to make the communication operational and functional in all respects. The display board to be used for display of all four (4) AAQMS station data as required.
20.	Certification	CE, UL/ULC listed
21.	IP Rating	Display Module IP67, Cabinet IP 65

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8. MOUNTING:

All Analysers shall be located in 19'' standard dual bay rack cabinet, power distribution, air circulation fans, pneumatic plumbing for mounting analysers.

Cabinet shall be designed considering adequate operational and maintenance access. Vendor to limit the number of horizontal analyser racks/bays to a maximum of 4.

9. CONSUMABLES:

Vendor to provide sufficient consumables and spares for a period till completion of warranty period for trouble free operation. Following consumables are required for ambient air monitoring stations as a minimum, as applicable:

1. Teflon filter and 2 m of Teflon tubing for sample inlet.
2. Built in zero/ span solenoid valve for zero/ span automatic calibration.
3. Chemical Reagents (if applicable)
4. Filter Papers
5. Printer paper (for 6 months of normal operation)
6. Calibration gas
7. Printer cartridge (for 6 months of normal operation)
8. Carrier Gas
9. Filter tape for PM10 and PM 2.5

10. INSPECTION AND TESTING

10.1 In addition to this specification vendor to comply all documents and specification as per SIV clause B12. Vendor shall submit the following test certificates and test reports for review for each of the analysers:

a) Dimensional verification certificate for each analyser.
b) Material test report as per clause 2.2 of EN10204 for all wetted parts.
c) Manufacturer's test reports as per clause 3.1B of EN 10204 for various bought out components.
d) Leak test report for complete analyser system including sample handling system using Nitrogen or instrument air at 1.5 times the maximum working pressure.
e) Calibration report for each analyser as per clause 10.2 of this specification.
f) Repeatability test for each analyser as per clause 10.3 of this specification.
g) Power supply variation check.
h) Test certificates for zero, span, and carrier and fuel gases as applicable.
i) Certificates from statutory body for weatherproof enclosures as applicable.

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10.2 Analyser Calibration

Analyser along with sample handling system shall be calibrated using zero and span calibration gas samples in the following sequence:

a) Check/ adjust zero by connecting zero gas and span by connecting span gas.
b) Check again zero by connecting zero gas after (a) above. Also repeat span gas check.
c) If either or both zero and span are adjusted in step (b), repeat (b) again to verify the calibration until no further adjustments are made in zero and span.

10.3 Repeatability Testing

Repeatability of the analyser shall be checked by connecting either span gas (if it is approximately 70% of analyser span) or any other gas sample on continuous basis for the following time period.

a) 24 hours by manufacturer and report to be submitted for review.
b) 8 hours during witness inspection.

10.4 Witness Inspection (Factory Acceptance Test)

All the items supplied by vendor shall be staged for pre-dispatch inspection/ FAT by the Purchaser at vendor works. Following tests/ checks shall be carried out on each item as a minimum:

a) Physical dimensional verification and workmanship.
b) Bill of material check for each analyser system including sample handling system.
c) Leakage testing of complete system using nitrogen or instrument air.
d) Calibration checks as per clause 10.2 above.
e) Repeatability checks as per clause 10.3.
f) Functional checks
g) Power supply variation check. Analyser must function satisfactorily on specified variation of power supply voltage.
h) Review of all test certificates and test reports indicated in clause 10.2 above.

In the event when the witness inspection is not carried out by purchaser, the tests shall any way be completed by the vendor and documents for same shall be submitted to purchaser for scrutiny.

11. SHIPPING

All threaded and flanged openings shall be suitably covered to prevent entry of foreign material. Each major part shall be sealed in thick plastic bag. Suitable moisture absorbent shall be provided for electronic components.

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TECHNICAL SPECIFICATIONS

OF ANALYSERS REQUIRED FOR

AMBIENT AIR QUALITY MONITORING STATION

FOR PDH-PP COMPLEX AT PLL-DAHEJ

Rev. No	Date	Purpose	Prepared by	Reviewed by	Approved by
A	15.04.2026	Issued for MR	SC	NP/CP	VS

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1.0 INTRODUCTION

This document defines the technical specifications for Analysers to be installed in the Continuous Ambient Air Quality Monitoring Stations (AAQMS) for PDH PP complex at PLL Dahej under PDH PP Project Detailed scope of work and other technical specifications for the AAQMS shall be as per relevant documents attached elsewhere in the bid document.

2.0 SCOPE OF WORK FOR ANALYSERS

Four (4) numbers of AAQMS to be installed by the Contractor for PDH PP Complex. AAQMS are marked in the overall plot plan attached in the bid document.

The AAQMS shall be installed with following Analysers for Continuous Ambient Air Quality Monitoring.

a) SULPHUR DIOXIDE & HYDROGEN SULFIDE (SO_2 - H_2S) ANALYSER
b) OXIDES OF NITROGEN & AMMONIA (NO - NO_2 - NO_x - NH_3) ANALYSER
c) CARBON MONOXIDE (CO) ANALYSER
d) BTEX ANALYSER WITH DETECTOR
e) VOC ANALYZER
f) CONTINUOUS PM_{10} ANALYSER
g) CONTINUOUS $PM_{2.5}$ ANALYSER

The above analysers are intended for One Continuous Ambient Air Quality Monitoring (CAAQM) Station. The system should be completely functional. Any balance of material not specified but required for the purpose must be supplied by the vendor.

Brief Description	Quantity in Nos.
Analysers in Continuous Ambient Air Quality Monitoring Station	
SO_2 – H_2S Analyser	4 Units
NO – NO_2 – NO_x – NH_3 Analyser	4 Units
Carbon Monoxide (CO) Analyser	4 Units
BTEX Analyser with Detector	4 Units
VOC Analyzer	4 Units
Continuous PM_{10} Analyser	4 Units
Continuous $PM_{2.5}$ Analyser	4 Units

Technical specifications for these analysers shall be as specified in subsequent sections of these documents and as specified in the bid document.

3.0 TECHNICAL SPECIFICATION FOR ANALYSERS

Contractor to ensure that all technical requirements and Specifications for AAQMS (including analysers) are in compliance with the applicable CPCB/SPCB guidelines including latest version of National Ambient Air Quality Standard (NAAQS). The principles of Measurement for the analysers are indicated in the sections below but the same shall be ensured to be in

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compliance to the Technical Specifications for Continuous Ambient Air Quality Monitoring (CAAQM) Station (real time) of CPCB/SPCB.

3.1 AMBIENT SULPHUR DIOXIDE AND HYDROGEN SULFIDE (SO_2-H_2S) ANALYSER

01.	Principle	Pulsed UV Fluorescence
02.	Measurement	SO_2 and H_2S in Ambient Air
03.	Display	Digital
04.	Ranges	Auto ranging 0 - 200 ppb*
05.	Lower Detectable Limit	1 ppb*

Note: SO_2 analyser shall also have provision to analyse H_2S in Ambient Air.

3.2 AMBIENT OXIDES OF NITROGEN & AMMONIA (NO-NO_2-NO_x-NH_3) ANALYSER

01.	Principle	Chemiluminescence (NH_3 conversion to NO by oxidation. NO_2 also converted to NO. The difference obtained by measuring NO in output of two sample stream as equal to NH_3)
02.	Measurement	NO - NO_2 - NO_x - NH_3 in Ambient Air
03.	Display	Digital
04.	Ranges	Auto ranging 0-2000 ppb *
05.	Lower Detectable Limit	1 ppb *

3.3 AMBIENT CARBON MONOXIDE (CO) ANALYSER

01.	Principle	Non Dispersive Infra-Red (NDIR) with Gas Filter Correlation
02.	Measurement	CO in Ambient Air
03.	Display	Digital
04.	Ranges	Auto ranging 0 - 100 ppm *
05.	Lower Detectable Limit	0.1 ppm *

3.4 BTEX ANALYSER

01.	Principle	Based on gas Chromatographic separation and Photo Ionization Detector (PID)
02.	Measurement	Benzene, Toluene, Ethyl-benzene, o, m, p-Xylenes
03.	Display	Digital
04.	Range	0 - 100 ppb (0.32 – 325 µg/m^3)
05.	Lower detectable limit	0.2 ppb (0.65 µg/m^3) for 15 min cycle for Benzene
06.	Temperature Range	5 - 35°C or more

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DETECTOR:

Photo Ionization Detector (PID) or other equivalent detector as per EPA/EU/TUV/MCERT approved specifications, which do not require hydrogen or other gas to operate it. The system should have auto-clean & auto calibration facilities.

3.5 VOC ANALYZER

01.	Principle	Gas chromatography based continuous analyser /Adsorption & Desorption followed by GC analysis
02.	Measurement	VOCs in Ambient Air i.e. Acetone, Methanol, Ethanol, Iso Propyl Alcohol, Butanol, Carbon Tetra Chloride, Dichloro Methane, Chloroform, **as per section 12 of ASTM D5466**
03.	Display	Digital
04.	Ranges	Upto 300 ppbv
05.	Lower Detectable Limit	<1 ppbv

3.6 CONTINUOUS (SPM) PM_{10} ANALYSER

Based on the principle of Beta-ray attenuation, particulate sampled through the instrument and collected on fiberglass filter tape. Before and after sampling, β- ray radiation is measured by scintillation/G.M. counter. An internal microprocessor handles all sequences and automatically calculates the concentration of PM_{10}.

01.	Principle	Beta Ray attenuation
02.	Particle Size Cut Off	0 - 10 Microns
03.	Measuring Range	User selectable (0 – 500, 0 – 1000 & 0 – 2000 µg/m^3) with auto ranging feature
05.	Lower Detectable Limit	2 µg/m^3
06.	Detector	Plastic Scintillator / GM Counter
08.	Filter Material	Glass Fiber Filter
09.	Display	LED / LCD

3.7 CONTINUOUS $PM_{2.5}$ ANALYSER

Based on the principle of Beta-ray attenuation, particulate sampled through the instrument and collected on fiberglass filter tape. Before and after, sampling β- ray radiation is measured by scintillation/G.M. counter. An internal microprocessor handles all sequences and automatically calculates the concentration of $PM_{2.5}$.

01.	Principle	Beta Ray attenuation
02.	Particle Size Cut Off	0 – 2.5 Microns
03.	Measuring Range	User selectable (0 – 500, 0 – 1000 & 0 -2000 µg/m^3) with auto ranging feature

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05.	Minimum Detectable Limit	2 µg/m^3
06.	Detector	Plastic Scintillator / GM Counter
08.	Filter Material	Glass Fiber Filter
09.	Display	LED / LCD

Note:

PM_{10} and $PM_{2.5}$ analysers (for the AAQMS) shall be installed. Contractor may either provide common analyser for PM_{10} and $PM_{2.5}$ or separate analysers for PM_{10} & $PM_{2.5}$ at each AAQMS.

Additional ports/provision shall be provided for future addition of analyser for additional components as/if mandated by statutory authorities.

3.8 METEOROLOGICAL, FLOW AND ELECTRONICS CALIBRATION

The vendor should provide calibration devices or calibration check devices for the meteorological parameters namely temperature, wind speed, wind direction, relative humidity, solar radiation, rain fall as per the specifications of the manufacturers.

4.0 SCOPE OF WORK FOR METEOROLOGICAL STATION

4.1 METEOROLOGICAL SYSTEM

One (1) number of Meteorological system shall be provided by contractor which shall comply to following-

The meteorological instrumentation should be interfaced directly with the Data Acquisition System after passing through a lightning protection isolation box. The specifications are as follows:

(A) WIND SPEED

Range (Operation)	:	0 – 60 m/s or better
Sustainability	:	Up to 75 m/sec
Accuracy	:	± 0.5 m/sec or better
Resolution	:	0.1 m/sec
Sensor Type	:	Ultrasonic
Threshold	:	0.5 m/sec or less
Response time	:	10 sec or better

(B) WIND DIRECTION

Range	:	0 – 359 degree
Accuracy	:	± 3 degree or better
Resolution	:	1 degree
Sensor type	:	Ultrasonic
Threshold	:	0.5 m/sec or less

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Response time	:	10 sec or better

(C) AMBIENT TEMPERATURE

Range	:	-10 °C to 60 °C
Accuracy	:	± 0.2 °C or better (with radiation shield)
Response	:	10 seconds in still air
Resolution	:	0.1 °C
Sensor type	:	Resistance type
Response time	:	10 sec or better

(D) RELATIVE HUMIDITY

Range	:	0 to 100% RH
Accuracy	:	± 3.0 % or better
Resolution	:	1%
Sensor type	:	Capacitive / Solid State
Response Time	:	10 sec or better

(E) SOLAR RADIATION

Range	:	0 to 1500 W/m^2 or better
Accuracy	:	± 5.0 % or better
Resolution	:	$5W/m^2$
Sensor type	:	Silicon Photo diode

(F) RAINFALL

Range	:	0.2 mm to 100 mm /hr
Accuracy	:	± 5% or better
Resolution	:	0.2 mm
Sensor type	:	Tipping bucket rain gauge or any other suitable sensor
Response Time	:	10 sec or better

Note:
Specifications of meteorological station and its components shall be in compliance to the Technical Specifications for Continuous Ambient Air Quality Monitoring (CAAQM) Station (real time) of CPCB/SPCB.

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FIELD

MAIN GATE HOUSE BUILDING

DISPLAY BOARD DATA TRANSMISSION DEVICE *

OFC TO ETHERNET CONVERTER *

LIU *

COLOUR PRINTER LASER, A4 *

FIBER OPTIC CABLES *

FIBRE OPTIC CABLES $

DISPLAY BOARD MAIN GATE *

Dual redundant TCP/IP to MCR (Refer Sheet 2)

LIU
ETHERNET TO OFC CONVERTER
ETHERNET HUB-A | ETHERNET HUB-B
RS 232/ RS485 TO ETHERNET CONVERTER
RS232 | RS485
AN1 | AN2 | AN3 | | AN-N

AAQMS STN#1 SHELTER *

415V AC NON UPS POWER SUPPLY PROVIDED AT ONE POINT BY PURCHASER (#)

GATE HOUSE BUILDING, GATE–2

DISPLAY BOARD DATA TRANSMISSION DEVICE *

OFC TO ETHERNET CONVERTER *

LIU *

COLOUR PRINTER LASER, A4 *

FIBER OPTIC CABLES *

FIBRE OPTIC CABLES $

DISPLAY BOARD GATE 2 *

Dual redundant TCP/IP to MCR (Refer Sheet 2)

LIU
ETHERNET TO OFC CONVERTER
ETHERNET HUB-A | ETHERNET HUB-B
RS 232/ RS485 TO ETHERNET CONVERTER
RS232 | RS485
AN1 | AN2 | AN3 | | AN-N

AAQMS STN#2 SHELTER *

415V AC NON UPS POWER SUPPLY PROVIDED AT ONE POINT BY PURCHASER (#)

GATE HOUSE BUILDING, GATE–3

DISPLAY BOARD DATA TRANSMISSION DEVICE *

OFC TO ETHERNET CONVERTER *

LIU *

COLOUR PRINTER LASER, A4 *

FIBER OPTIC CABLES *

FIBRE OPTIC CABLES $

DISPLAY BOARD GATE 3 *

Dual redundant TCP/IP to MCR (Refer Sheet 2)

LIU
ETHERNET TO OFC CONVERTER
ETHERNET HUB-A | ETHERNET HUB-B
RS 232/ RS485 TO ETHERNET CONVERTER
RS232 | RS485
AN1 | AN2 | AN3 | | AN-N

AAQMS STN#3 SHELTER *

415V AC NON UPS POWER SUPPLY PROVIDED AT ONE POINT BY PURCHASER (#)

Dual redundant TCP/IP to MCR (Refer Sheet 2)

LIU
ETHERNET TO OFC CONVERTER
ETHERNET HUB-A | ETHERNET HUB-B
RS 232/ RS485 TO ETHERNET CONVERTER
RS232 | RS485
AN1 | AN2 | AN3 | | AN-N

AAQMS STN#4 SHELTER *

415V AC NON UPS POWER SUPPLY PROVIDED AT ONE POINT BY PURCHASER (#)

NOTES :-

1. Common Laptop (Latest Configuration) with required software/ hardware, cables etc. to be provided by bidder for interfacing with analyzers and analyzer shelter PLC (if applicable) for trouble shooting and maintenance of AAQMS.
2. 240VAC NON-UPS power supply shall be provided by purchaser at one point near gate house buildings for display board data transmission devices and for display boards. Further power supply distribution shall be by bidder including supply of UPS of suitable capacity.

* BY BIDDER
$ BY PURCHASER / OTHERS

ENGINEERS INDIA LIMITED
NEW DELHI

PROJECT:– PDH–PP
CLIENT:– PLL

REV.	DATE	REVISION	BY	CHK	APPROVED	APPROVED
A	30.04.26	ISSUED WITH MR	MK	AJS	KS	

INDICATIVE CONFIGURATION SCHEMATIC FOR AAQMS

DRAWING NO. B862–000–16–51–SK–2666 | REV. A

SHEET 1 OF 3

1–1641–0503 REV.0 A3–420x297

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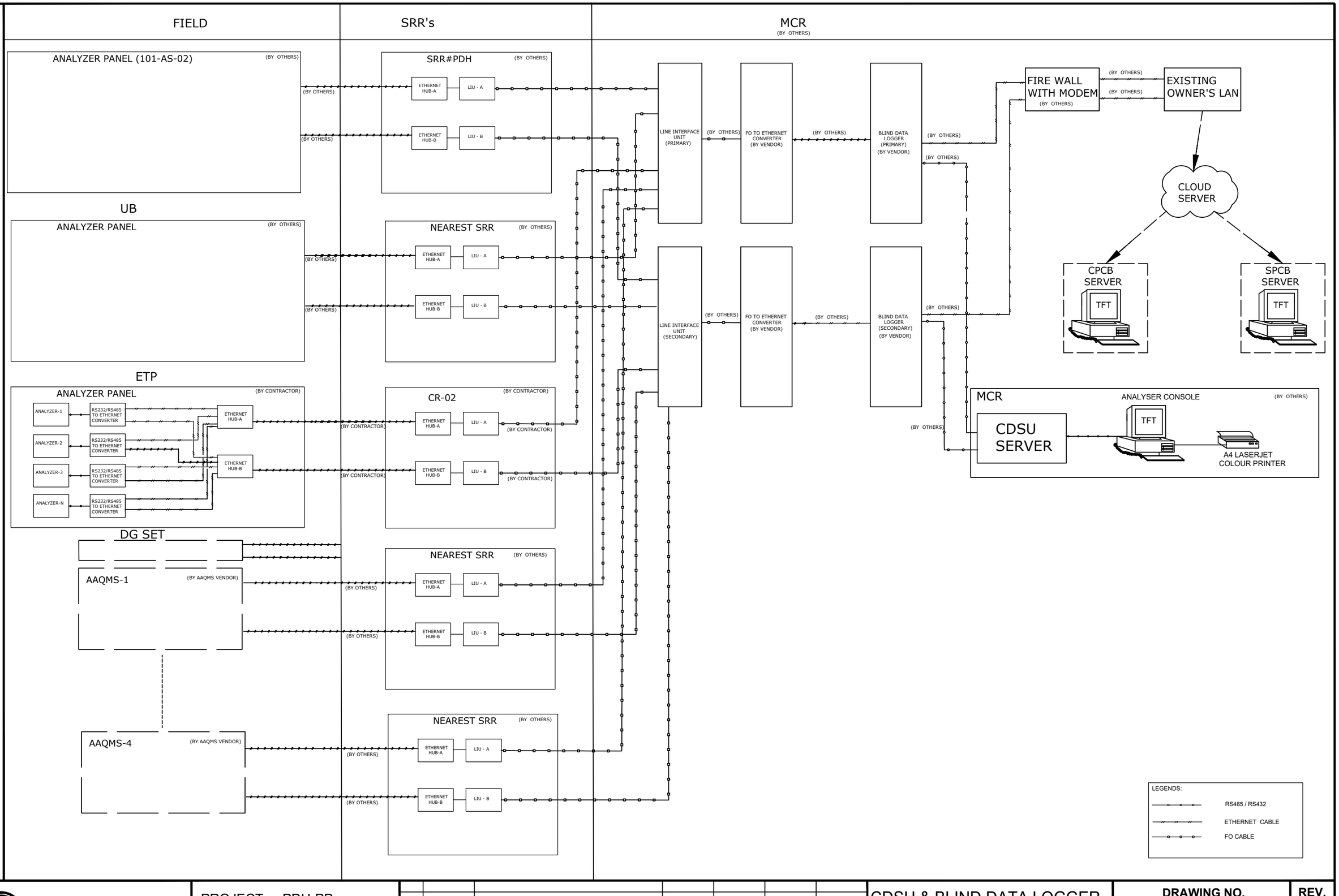

ENGINEERS INDIA LIMITED
NEW DELHI

PROJECT:- PDH-PP
CLIENT:- PLL

REV.	DATE	REVISION	BY	CHK	APPROVED	APPROVED
A	30.04.26	ISSUED WITH MR	MK	AJS	KS	

CDSU & BLIND DATA LOGGER INTERFACE SCHEMATIC

DRAWING NO.	REV.
B862-000-16-51-SK-2666	A
SHEET 2 OF 3	

1-1641-0503 REV.0 A3-420x297

Page 258 of 471 : B862-000-YA-MR-2666-544-RFQ : Rev. 0

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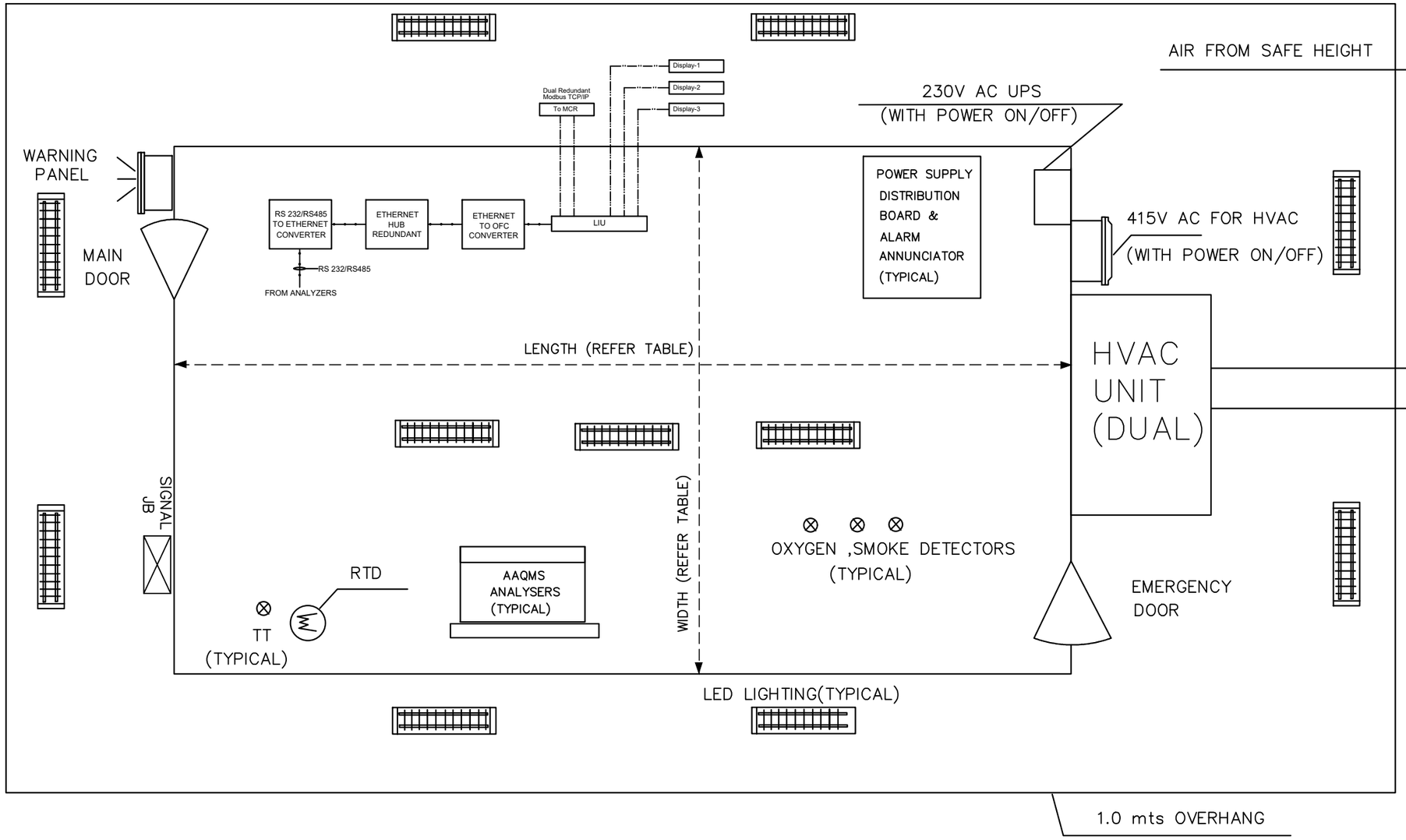

NOTES :–

1. THE SHELTER IS LOCATED IN SAFE AREA,AREA CLASSIFICATION INSIDE ANALYSER SHELTER SHALL BE SAFE ON HVAC FAILURE.
2. 1.0 m OVERHANG AROUND THE SHETER SHALL BE PROVIDED.
3. DETECTORS LOCATION & MOUNTING TO BE DECIDED BY VENDOR AND SAME SHALL BE FINALISED DURING DETAIL ENGINEERING.
4. EXACT NO OF LED LIGHTS & ITS LOCATION SHALL BE DECIDED BY BIDDER.
5. MINIMUM SIZE OF SHELTER SHALL BE AS SHOWN IN THE TABLE TO THE RIGHT. HOWEVER, BIDDER MUST SIZE THE ANALYZER SHELTER CONSIDERING PROPER MAINTANENCE SPACE, FREE DOOR ACCESS IN CASE OF PANIC AND FREEDOM OF MOBILITY OF TEST EQUIPMENTS DURING CALIBRATION ETC.
6. BIDDER MUST FURNISH ANALYZER SHELTER DRAWING CLEARLY MARKING THE DIMENSIONS FOR EACH ANALYZER AND FREE SPACE AVAILABLE FOR MAINTENENCE, CALIBRATION & OPERATION.
7. BIDDER TO CONSIDER 6 MTR DUCT FOR QUOTATION PURPOSE . ALL SUPPORTS INCLUDING STRUCTURAL SUPPORTS AS REQUIRED TO ROUTE THE DUCT IN SITE ARE IN BIDDER'S SCOPE.

SIZE OF AAQMS SHELTER (EXCLUDING OVERHANG)		
S.NO	SHELTER	SIZE (LENGTH X WIDTH X HEIGHT)
1	AAQMS STN–1	4M X 3M X 2.5M
2	AAQMS STN–2	4M X 3M X 2.5M
3	AAQMS STN–3	4M X 3M X 2.5M
4	AAQMS STN–4	4M X 3M X 2.5M

ENGINEERS INDIA LIMITED
NEW DELHI

PROJECT: –PDH–PP
CLIENT: – PLL

REV.	DATE	REVISION	BY	CHK	APPROVED	APPROVED
A	30.04.26	ISSUED WITH MR	MK	AJS	KS	

LAYOUT FOR ANALYSER SHELTER (TYPICAL)

DRAWING NO. B862–000–16–51–SK–2666 | REV. A

SHEET 3 OF 3

1–1641–0503 REV.0 A3–420x297

Page 259 of 471 : B862-000-YA-MR-2666-544-RFQ : Rev. 0

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eqfnzr fd;k tk,xk u vkSj dh tk,xh u m/kkj fn, tk,axs vkSj u izfrfyfi;k¡ fd, tk,axs vkSj u gh Lkkfer vkSj lwpuk ds vuqlkj gh fd;k tk ldrk gSA
o"kZ ls ;g m/kkjnkj dks fyfeVsM dh lgefr ds fcuk ;k mlds fy;s fdlh Hkh rjhds ls bl dk mi;ksx fd;k tk ldrk gSA
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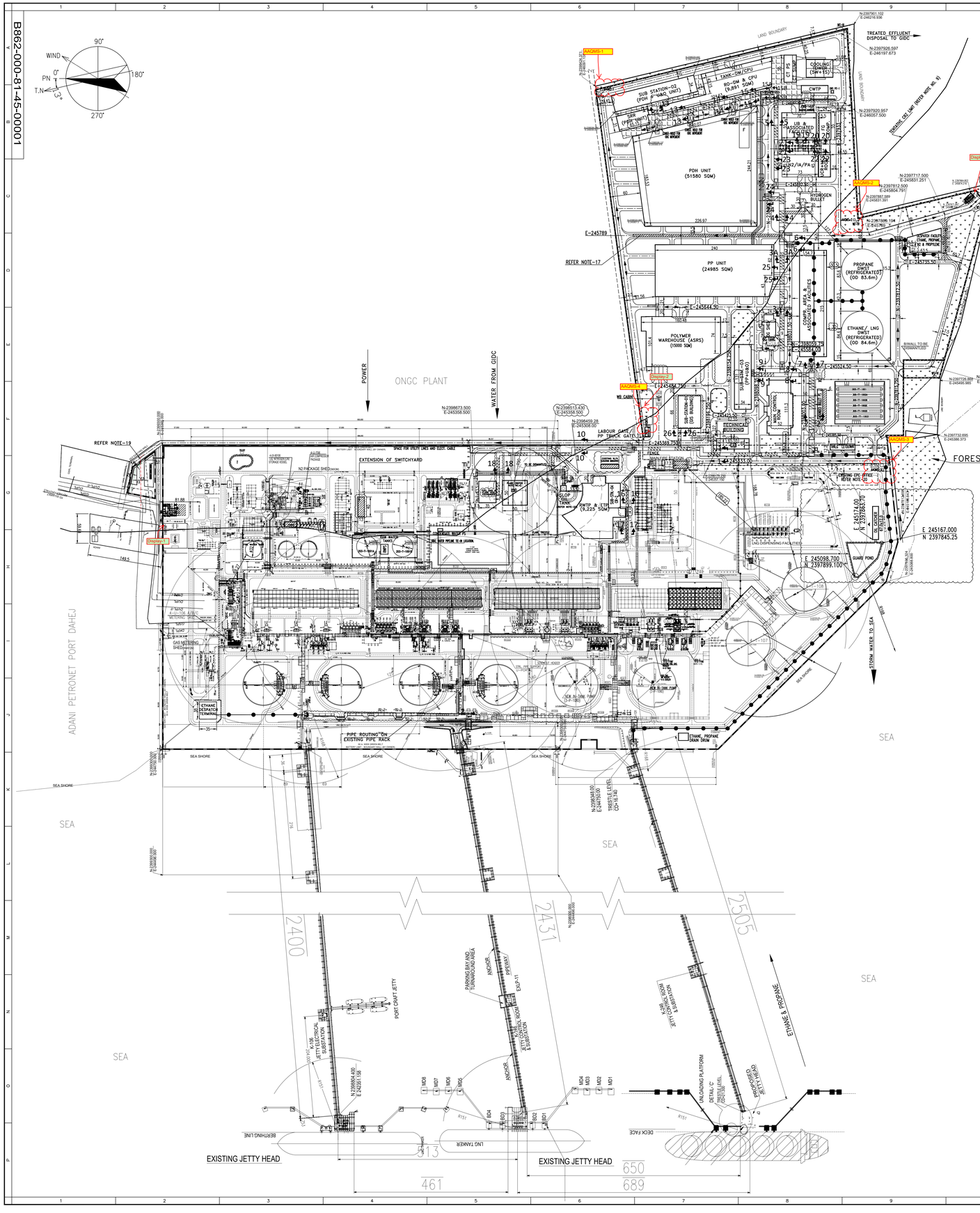

LIST OF FACILITIES (B862)

PROCESS UNIT CAPACITIES

SL.	PROCESS UNIT	UNIT	CAPACITY	UNIT NO.	LICENSOR	GRID
1	PDH	KTPA	750	101	UOP	B7
2	POLY PROPYLENE UNIT	KTPA	500	102	LUMMUS NOVOLEN TECHNOLOGY	D7

OFFSITE STORAGE

SL. NO.	SERVICE	STORED CAPACITY PER TANK	DIA, M	HEIGHT/ LENGTH, M	NO. OF TANKS	TYPE	REMARKS	GRID
1	CRYOGENIC PROPANE	1,40,000 CUM	83.6	32.5	1	DWST (REFRIGERETED)	OUTER TANK DIMENSION	D9
2	CRYOGENIC ETHANE	1,70,000 CUM	84.6	38.4	1	DWST (REFRIGERETED)	OUTER TANK DIMENSION	D9
3	PROPYLENE	4520 CUM	8	85	4	MOUNDED BULLET		E9
4	OFFSPEC PROPYLENE	4520 CUM	8	85	1	MOUNDED BULLET		E9
5	PROPANE	4520 CUM	8	85	1	MOUNDED BULLET		E9
6	HYDROGEN	335 CUM	4	24	2	VERTICAL BULLET		C8
7	DIESEL	137.9 CUM	5.6	5.6	1	CONE ROOF TANK		E8
8	SLOP OIL TANK	137.9 CUM	5.6	5.6	1	CONE ROOF TANK		G6

UTILITY SYSTEMS

S. NO.	DESCRIPTION	CAPACITY	GRID
1. RAW WATER SYSTEM (UNIT NO. 203)			
A	RAW WATER	RAW WATER SHALL BE IMPORTED FROM GIDC. NEW CS RAW WATER STORAGE TANKS OF CAPACITY 48000 M3 IN TWO EQUAL TANKS WITH RWPS	G4
B	RAW WATER TREATMENT PLANT	650 M3/HR	G6
C	FIRE WATER	FIRE WATER TANK DIA 30 M, HEIGHT 20 M	H3
2. COOLING WATER SYSTEM (UNIT NO. 202)			A8
A	COOLING TOWER	6 (5W + 1S) CELL OF 4000 M3/HR CAPACITY EACH	
B	COOLING WATER PUMPS	4 (3W + 1S) PUMP OF 6700 M3/HR CAPACITY EACH	
3. DM WATER SYSTEM			A7
A	RO DM PLANT (UNIT NO. 204)	80 M3/HR	
B	CPU (UNIT NO. 205)	(1+1) x 90 M3/HR EACH	
4	NITROGEN/ IA/ PA (UNIT NO. 206/207)	N2 CAPACITY: 3100 NM3/HR PA:1830 + IA: 6920 NM3/HR	C8
5	NO. OF UTILITY BOILERS	1 + 1 BOILER x 60 TPH	B8
6	POWER	GRID IMPORT, 161 MW	E7
7	ETP (UNIT NO. 209)	40 M3/HR	G4
8	ETHANE DESPATCH TERMINAL		J2
9	ETHANE, PROPANE, H2 & PROPYLENE DESPATCH TERMINAL		C9
10	FLARE	EXISTING FLARE (B-901) SHALL BE DISMANTLED AND NEW FLARE SHALL BE PROVIDED FOR THE PETCHEM AND LNG LOAD	G5

LIST OF SUBSTATION

S. NO.	UNIT	SUBSTATION NO.	STOREYS	REMARKS	GRID
1	MAIN RECEIVING (GIS BUILDING)	SS-01	G+1		E7
2	PDH + U&O	SS-02	G+3	CONTROL ROOM OF RO-DM & CPU SHALL ALSO BE LOCATED IN SS-02	B7
3	PP + U&O	SS-03	G+3		E7
4	RWTP + ETP	SS-04	G+2		G6

LIST OF CONTROL ROOM / SRR

S. NO.	CONTROL ROOM	INCLUDED UNITS	REMARKS	TYPE	GRID
1	UCR+MCC ROOM	N2/IA/PA+UB+CT	G+2	NON-BLAST RESISTANT	B8
2	SRR-101	PDH	G	BLAST RESISTANT	B6
3	MAIN CONTROL ROOM	-	G	BLAST RESISTANT	E8
4	CR-02	RWTP + ETP	--	NON-BLAST RESISTANT	G6

NON PLANT BUILDING LIST

1	POLYMER WARE HOUSE	20 DAYS STORAGE (ASRS - AUTOMATIC STORAGE & RETRIEVAL SYSTEM)	E7
2	FWPH	EXTENSION OF EXISTING BUILDING	F3
3	DG SHED	--	E8
4	LAB	G+2 STOREY	F7
5	FIRE STATION	EXISTING TO BE EXTENDED	F7
6	WARE HOUSE SHED	EXISTING TO BE EXTENDED	F6
7	TECHNICAL BUILDING	G+2 STOREY	G2
8	MAIN GATE HOUSE	EXISTING TO BE EXTENDED	G2
9	GATE HOUSE- 2 & 3		
10	WEIGH BRIDGE CABIN		F6
11	CATALYST WAREHOUSE		G1

REF. DWG. NO.	REFERENCE DRAWING TITLE
B326-000-17-44-00001	OVERALL PLOT PLAN
B438-000-17-44-00002	OVERALL PLOT PLAN
B563-000-81-45-00002	OVERALL PLOT PLAN

NOTES :-

1. ALL DIMENSIONS, COORDINATES AND ELEVATION/LEVELS ARE IN METER.
2. FGL EL 0.00M = CD+12.20 M AND LEVELS ARE RELATIVE TO CD (CHART DATUM) FOR THE EXISTING LNG PLANT. FOR THE PETCHEM AREA TO THE EAST OF ROAD E 245333, THE FGL IS CD+12.5 M AND (HPP = 13.0M.)
3. DELETED.
4. EXISTING FLARE STACK B-901 TO BE DISMANTLED. AFTER DIVERTING FLARE LOAD OF STACK B-901 TO B-902. NEW DERRICK STRUCTURE, HOUSING NEW PETCHEM FLARE STACK AND LOW PRESSURE FLARE STACK FOR ETHANE/PROPANE/LNG FLARE LOADS, SHALL BE INSTALLED IN THE PLACE OF B-901 STACK. AFTER COMMISSIONING OF NEW FLARE STACK, LOAD FROM B-902 SHALL BE DIVERTED TO NEW LOW PRESSURE FLARE STACK AND B-902 SHALL BE DISMANTLED, THEREBY CREATING SPACE FOR WATER BLOCK (RWTP+ETP).
5. ELECTRICAL LOADS OF FACILITIES COMING UNDER EXISTING PLANT SUCH AS CATALYST WAREHOUSE, ADDITIONAL FIRE WATER PUMPS, FLARE, ETHANE DISPATCH TERMINAL ETC. SHALL BE FED FROM NEARBY EXISTING SUBSTATION OF PLANT.
6. FOR LAY DOWN, OPEN STORAGE YARD AND FABRICATION APPROX. 20 HECTARE LAND SHALL BE ARRANGED BY THE CLIENT/ CONTRACTOR IN THE PLANT VICINITY. PLL SHALL OBTAIN PERMISSION FOR MOVEMENT OF THE ODC MOVEMENT FROM THE SEZ AREA
7. DELETED.
8. DELETED.
9. CRZ LIMIT SHOWN IS INDICATIVE. FENCING ALONG WITH FOOTPATH WILL BE PROVIDED ALONG THE CRZ LINE.
10. HAZARDOUS WASTE STORAGE, SECURED LANDFILL, CAR PARKING, GAS CYLINDER STORAGE, TEAL STORAGE IS NOT LOCATED INSIDE THE PLOT AND FOR THE SAME CLIENT TO HAVE ARRANGEMENT OUTSIDE THE COMPLEX.
11. POWER SUPPLY TO THE GIS SUB-STATION HAS BEEN CONSIDERED FROM THE EXISTING SWITCH YARD ONLY. ACCORDINGLY, THE GIS SUB-STATION HAS BEEN PLANNED.
12. DELETED.
13. SPACE FOR POLYMER TRUCK PARKING IS BEING PROVIDED BY THE CLIENT IN THE VICINITY OF THE COMPLEX.
14. THE BARRICADING REQUIREMENT SHALL BE FINALIZED IN CONSULTATION WITH THE CLIENT SAFETY.
15. FLARE ROUTING FROM ETHANE DESPATCH TERMINAL IS INDIACTED.
16. SUCTION FOR PLANT AIR TO BE TAKEN FROM UCR SIDE (SOUTHERN SIDE), WITH A DEDICATED HC DETECTOR IN THE SUCTION DUCT
17. FOR CONSTRUCTION PURPOSE & ODC MOVEMENT ROAD WIDTH SHALL BE 12.5M. BUT THE FINAL FINISH ROAD BETWEEN PPU & PDH SHALL BE 6M WIDE TO AVOID ANY HAZARDOUS AREA CLASSIFICATION.
18. THE HELIPAD HAS BEEN REMOVED AS PER DISCUSSION WITH THE CLIENT.
19. ANY EXCAVATION/ CONSTRUCTION ACTIVITY SHALL BE CARRIED OUT AFTER TAKING DUE APPROVAL FROM CLIENT DUE TO EXISTING BURIED HYDROCARBON PIPELINE NEAR CATALYST WAREHOUSE AREA.
20. THE EXISTING EPCC OFFICE TO BE UTILIZED AS TEMPORARY SITE OFFICE, THE SAME SHALL BE DISMANTLED 14 MONTHS PRIOR TO MECHANICAL COMPLETION OF THE PETROCHEMICAL COMPLEX & SITE OFFICE TO BE SHIFTED TO TECHNICAL BUILDING.
21. FENCING HAS BEEN PROVIDED TO SEGREGATE THE EXISTING LNG COMPLEX & THE NEW PETROCHEMICAL COMPLEX.
22. THE SLOP TANK WILL BE CONSTRUCTED & COMMISSIONED AFTER DECOMMISSIONING OF THE FLARE STACK 3-B-902.
23. ANY CONSTRUCTION ACTIVITY/ LABOUR MOVEMENT SHALL BE AVOIDED IN THE 50M STERILE ZONE OF THE EXISTING FLARE STACK 3-B-902.
24. POLYMER PRODUCT TRUCK MOVEMENT IN BOTH DIRECTIONS IN PROPOSED FROM 9.0M WIDE ROAD. CLIENT MAY PREPARE SOP TO AVOID CONGESTION ON THE ROAD.
25. THE HATCHED PORTION OF ROAD (N 2397717.50) SHALL BE RESTRICTED FOR THE MOVEMENT OF NORMAL TRAFFIC. THIS SHALL BE USED ONLY FOR MOVEMENT OF FIRE TENDERS, MAINTENANCE VEHICLES AND OTHER EMERGENCY VEHICLES.

LEGENDS:

- PROPOSED FACILITIES PETCHEM (UNDER JOB NO. B862)
- MODIFICATION IN EXISTING FACILITY (UNDER JOB NO. B862)
- PIPE RACK TENTATIVE (BY DWST PACKAGE CONTRACTOR) (JOB B862)
- PIPE RACK (JOB B862)
- CRANE/ ODC MOVEMENT ROAD
- SLEEPER (JOB B862)
- POLYMER TRUCK MOVEMENT ROAD (JOB B862)
- BARRICADING (JOB B862)
- RCC PAVED AREA (Job B862)
- GREEN BELT (Job B862)
- BRIDGE HEIGHT X M FOR ODC (Job B862)

AREA CHART

TOTAL PLOT AREA WITHIN LAND LIMIT	= 131.5 HECTARE
NEW PLOT AREA (PDH-PP) EXCL. TEMPLE LAND	= 47.73 HECTARE
PLANT AREA FOR PDH-PP COMPLEX	= 43.73 HECTARE
GREEN BELT REQD. FOR NEW PLANT (40%)	= 29.2 HECTARE
GREEN BELT FOR NEW PLANT NEAR PROPOSED COMPLEX	= 6.0 HECTARE
REQUIRED ADDITIONAL GREEN BELT AREA	= 23.2 HECTARE
ADDITIONAL GREEN BELT AREA BEING DEVELOPED OUTSIDE	= 50.0 HECTARE

REV	DATE	REVISIONS	BY	CHKD	APPD	PM
G	10.03.2026	REVISED & ISSUED FOR ENGINEERING	Anil	NS/AK	SKN	
F	12.03.2025	ISSUED FOR PESO APPROVAL	Anil	NS/AK	SKN	
E	27.11.2024	REVISED & ISSUED FOR ENGINEERING/PPRRC	Anil	NS/AK	SKN	
D	9.07.2024	ISSUED FOR ENGINEERING	Anil	NS/AK	SKN	
C	28.06.2024	REVISED & ISSUED FOR COMMENTS	Anil	NS/AK	SKN	
B	02.04.2024	ISSUED FOR PPRC	Anil	NS/AK	SKN	
A	27.03.2024	ISSUED FOR COMMENTS	Anil	NS/AK	SKN	

इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम) ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)

PETRONET LNG LIMITED
iSV°ksuSV ,y ,u th fyfeVsM

ih-,y-,y- ngst esa bFksu ,oa izkSisu dh lqfo/kk lfgr ih-Mh-,p-

PDH-PP PLANT WITH ETHANE & PROPANE HANDLING FACILITY AT PLL DAHEJ COMPLEX

lEiwZ.k ;kstuk ;ks:i OVERALL PLOT PLAN

SCALE	JOB NO.	UNIT	DIVN.	DEPT.	DWG. NO.	REV.
1:3000	B862	000	81	45	00001	G

3-1641-0500 REV.3 / 30.12.2019 A0-1189 x 841

B862-000-81-45-00001

B862-000-81-45-00001_Rev_G.dgn 30-Jan-2026 14:49:59 B862-000-81-45-00001

CALIBRATION GAS REQUIREMENTS

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued with MR	MK	AJS	KS

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CALIBRATION GAS REQUIREMENTS					
S.NO.	**ANALYSER**	**ANALYSER TYPE**	**ZERO GAS CYLINDER WITH REGULATOR, PRESSURE GAUGE, RELIEF VALVE ETC.**	**SPAN GAS CYLINDER WITH REGULATOR . PRESSURE GAUGE, RELIEF VALVE ETC.**	**FUEL GAS / CARRIER GAS CYLINDER WITH REGULATOR, PRESSURE GAUGE, RELIEF VALVE ETC.**
1	SO2 - H2S	AMBIENT SULPHUR DIOXIDE (SO2), H2S ANALYSER	*	*	*
2	NO-NO2 – NOx – NH3	AMBIENT OXIDES OF NITROGEN (NONO2-NOx), NH3 ANALYSER	*	*	*
3	BTEX	AMBIENT BTEX ANALYSER	*	*	*
4	CO	AMBIENT CARBON MONOXIDE (CO) ANALYSER	*	*	*
5	VOC	AMBIENT VOC ANALYSER	*	*	*
Bidder shall fill the rows for any other analyzer requiring calibration gas.					

Bidder shall supply all calibration gas cylinders for zero and span calibration, fuel gas / carrier gas cylinders of analyzers meeting the following requirements and also as per Standard Specification, 6-52-0035 requirements:
a) Bidder shall supply calibration gas cylinders required for calibration of each analyzer which shall be necessary for start-up, commissioning plus 12 months of normal operation considering frequency and duration of calibration, as per Standard Specification, 6-52-0035 requirements, as a minimum.
b) These calibration gas cylinders shall be supplied in two sets. One set of these cylinders shall be supplied by bidder for calibration, testing and commissioning after intimation by the site engineer-in-charge prior to startup and commissioning and the 2nd set of cylinders shall be supplied by the bidder six months after commissioning of AAQMS analysers.
c) Calibration gas accuracy shall be adequate to demonstrate the repeatability of the analysers.
d) Calibration gas cylinder material of construction shall be as per Standard Specification, 6-52-0035, maintaining stability of calibration gas mixture for specified time including PESO approval certificates.
e) Bidder supplied calibration cylinders shall be provided with calibration gas test certificates & valid cylinder certificates (Hydraulic testing).
f) Cylinders shall be kept chained in a stand provided by the bidder with a canopy outside AAQMS shelters.
g) Calibration Gas required for demonstrating/ proving of calibration at Site (ensuring repeatability) during the course of Pre-commissioning & Commissioning shall be in bidder's scope. Bidder to accordingly add the pre-commissioning & commissioning requirements in cylinder sizing calculations. Contents of these cylinders shall not be used for any flushing/cleaning requirements.

* - By Bidder

[ ] DEVIATION [ ] NO DEVIATION [ ] BIDDER SEAL WITH SIGNATURE

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UTILITY CONSUMPTION

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued with MR	MK	AJS	KS

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TABLE I (A) 415 VAC, 3 PHASE NON-UPS

S.NO.	ITEM	MAX POWER CONSUMPTION	INRUSH CURRENT	
		TOTAL CONSUMPTION	AMP.	DURATION
AMBIENT AIR QUALITY MONITORING SYSTEM				
1	AAQMS Station-1			
2	AAQMS Station-2			
3	AAQMS Station-3			
4	AAQMS Station-4			

TABLE I (B) 240 VAC non-UPS

S.NO.	ITEM	MAX POWER CONSUMPTION	INRUSH CURRENT	
		TOTAL CONSUMPTION	AMP.	DURATION
AMBIENT AIR QUALITY MONITORING SYSTEM				
1	Feeder near Main Gate House			
2	Feeder near Gate House-2			
3	Feeder near Gate House-3			

Note:

1. Bidder to furnish tag wise Utility requirements in their offer and also during detailed engineering stage.
2. Purchaser will supply 415 V AC, 3 phase non UPS power supply feeder at one point near each of the AAQMS station & 240 V AC Non-UPS power supply feeder at one point near each of the Gate Houses (Common 240 V AC Non-UPS power supply feeder will be provided by the purchaser for the common data logger cum display board data transmission device near each Gate Houses). Further distribution of power to each components/ equipment (AAQMS analysers, HVAC , display board, data loggers, printers etc.) supplied by bidder including any required power/voltage conversions along with all required accessories and cables are in bidder's scope including distribution boxes, terminations, cabling etc. Any power/voltage conversions shall use redundant PSU's with independent upstream and downstream isolation facilities followed by diode O-ring units.

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VENDOR LIST

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
CLIENT	:	**M/s PETRONET LNG LIMITED (PLL)**
CONSULTANT /PMC	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued With MR	MK	AJS	KS

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 06AB		**Description :** HVAC SYSTEM- PACKAGED AIR CONDITIONING		
Approved Suppliers				
1	S461	S K SYSTEMS PVT LTD	INDIA	
2	3678	ROOTS COOLING SYSTEMS PVT. LTD.	INDIA	
3	B029	BLUE STAR LTD	INDIA	
4	E178	VERTIV ENERGY PRIVATE LIMITED	INDIA	
5	3962	ANEMO PROJECTS PVT LTD	INDIA	
6	4355	TAP ENGINEERING	INDIA	
7	4180	AIR PERFECTION	INDIA	
8	3886	PURVI ENGINEERS INDIA PVT LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13IA		**Description :** U.P.S.SYSTEM		
Approved Suppliers				
1	27401	Borri S.p.A	ITALY	
2	C592	CHLORIDE SAS	FRANCE	
3	T597	TOSHIBA CORPORATION	JAPAN	
4	D026	VERTIV ENERGY PVT. LTD.	INDIA	
5	G562	GUTOR ELECTRONIC LLC	SWITZERLAND	
6	H010A	HITACHI HI-REL POWER ELECTRONICS PRIVATE LIMITED	INDIA	
7	4361	DUBAS ENGINEERING PRIVATE LIMITED	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15AA		**Description :** TUBE FITTINGS		
Approved Suppliers				
1	3694	PRECISION ENGINEERING INDUSTRIES	INDIA	
2	4167	ASTEC VALVES & FITTINGS PVT. LTD.	INDIA	
3	S146	SEALEXCEL (INDIA) PVT. LTD.	INDIA	
4	M058	MULTIMETAL INDUSTRIES	INDIA	
5	A345	ARYA CRAFTS & ENGINEERING PVT LTD	INDIA	
6	A240	ASTEC VALVES & FITTINGS PVT. LTD.	INDIA	
7	C220	COMFIT & VALVES PVT. LTD.	INDIA	
8	4303	TRUEWAY ENGINEERING INDUSTRIES	INDIA	
9	4301	ARCELLOR CONTROLS INDIA	INDIA	
10	27408	SWAGELOK COMPANY	UNITED STATES	
11	P240	PRECISION ENGINEERING INDUSTRIES	INDIA	
12	27440	FITOK INCORPORATED	CHINA	
13	E008	EXCELSIOR ENGG. WORKS	INDIA	
14	E104	EXCEL HYDRO PNEUMATICS PVT LTD	INDIA	
15	P303	PRIME ENGINEERS	INDIA	
16	3737	HAVI ENGINEERING INDIA PVT LTD	INDIA	
17	3745	MET-LOK VALVES AND FITTINGS	INDIA	
18	F146	FLUID CONTROLS LIMITED	INDIA	
19	H634	HAM-LET (ISRAEL-CANADA) LTD.	ISRAEL	
20	P671	PARKER HANNIFIN CORPORATION	UNITED STATES	
21	S816	SSP FITTINGS CORPORATION	UNITED STATES	
22	4011	APTEK INSTRUMENTATION PVT LTD	INDIA	
23	4319	VENTIL FLOWSERVE PRIVATE LIMITED	INDIA	
24	4342	FLUIDTEQ SYSTEMS	INDIA	
25	4363	HY-TECH ENGINEERS LIMITED	INDIA	
26	4286	SHARP ENGINEERING	INDIA	
27	4120	TUBEFIT ENGINEERS	INDIA	
28	3871	PANAM ENGINEERS LIMITED	INDIA	
29	3931	HP VALVES & FITTINGS INDIA PRIVATE LTD	INDIA	
30	27559	DK-LOK CORPORATION	KOREA, REPUBLIC OF	
31	3630	WESMEC ENGINEERING PRIVATE LIMITED	INDIA	
32	4057	MET-LOK VALVES AND FITTINGS	INDIA	
33	3937	SHREEMARUTI INSTRUMENTS PVT LIMITED	INDIA	
34	C714	CRANE INSTRUMENTATION & SAMPLING PFT CORP.	UNITED STATES	
35	S303	SWASTIK ENGINEERING WORKS	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15AB		**Description :** INSTRUMENT TUBING		
Approved Suppliers				
1	R066	RATNAMANI METALS AND TUBES LTD	INDIA	
2	P260	TUBACEX TUBES AND PIPES PRIVATE LIMITED	INDIA	
3	J110A	JINDAL SAW LTD (KOSI WORKS)	INDIA	
4	27559	DK-LOK CORPORATION	KOREA, REPUBLIC OF	
5	S202	SHUBHLAXMI METALS AND TUBES PVT. LTD	INDIA	
6	R127	REMI EDELSTAHL TUBULARS LTD (FORM RMIL)	INDIA	
7	M287	MAXIM TUBES COMPANY PVT LTD	INDIA	
8	S406	SURAJ LIMITED	INDIA	
9	K186	KRYSTAL GLOBAL ENGINEERING LIMITED	INDIA	
10	3685	HEAVY METAL & TUBES (INDIA) PRIVATE LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15CC		**Description :** OPTICAL FIBRE CABLE & ASSOC.ITEM		
Approved Suppliers				
1	3752	APAR INDUSTRIES LTD	INDIA	
2	S387	WEST COAST PAPER MILLS LIMITED (DIVISION: WEST COAST OPTILINKS)	INDIA	
3	B155	BIRLA CABLE LIMITED	INDIA	
4	K615	KABEL RHEYDT	GERMANY	
5	P610	PIRELLI CAVI SPA	ITALY	
6	4140	HTL LIMITED	INDIA	
7	4316	ORIENT CABLES INDIA PVT. LTD.	INDIA	
8	4317	WEST COAST OPTICABLE LTD.	INDIA	
9	K190B	KEC ASIAN CABLES LIMITED	INDIA	
10	A400	AKSH OPTIFIBRE LIMITED	INDIA	
11	H138	HFCL LIMITED	INDIA	
12	U099	U M CABLES LTD	INDIA	
13	V092	VINDHYA TELELINKS LIMITED	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15EA		**Description :** SOLENOID VALVES		
Approved Suppliers				
1	4029	IMI NORGREN HERION PVT. LTD	INDIA	
2	H554	HERION WERKE	GERMANY	
3	A721	ASCO JOUCOMATIC SA	FRANCE	
4	A555	ASCO JOUCOMATIC LTD	UNITED KINGDOM	
5	4153	UFLOW AUTOMATION	INDIA	
6	V542	VERSA BV	NETHERLANDS	
7	S091	SCHRADER DUNCAN LIMITED	INDIA	
8	A052	AVCON CONTROLS PVT. LTD.	INDIA	
9	A588	ALCON ALEXANDER CONTROLS LIMITED	UNITED KINGDOM	
10	R021	ROTEX AUTOMATION LTD.	INDIA	
11	A167	EMERSON PROCESS MANAGEMENT CHENNAI PVT. LTD.	INDIA	
12	3661	ROTEX AUTOMATION LTD.	INDIA	
13	P217	PRECISION INSTRUMENT COMPANY	INDIA	
14	T745	THOMPSON VALVES LTD	UNITED KINGDOM	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15ED		**Description :** INSTRUMENT VALVES& MANIFOLDS		
Approved Suppliers				
1	A710	ANDERSON GREENWOOD CROSBY	UNITED STATES	
2	P671	PARKER HANNIFIN CORPORATION	UNITED STATES	
3	3745	MET-LOK VALVES AND FITTINGS	INDIA	
4	P303	PRIME ENGINEERS	INDIA	
5	H634	HAM-LET (ISRAEL-CANADA) LTD.	ISRAEL	
6	M010	WIKA PROCESS SOLUTIONS INDIA PRIVATE LIMITED	INDIA	
7	E008	EXCELSIOR ENGG. WORKS	INDIA	
8	E104	EXCEL HYDRO PNEUMATICS PVT LTD	INDIA	
9	27414	SWAGELOK COMPANY	UNITED STATES	
10	27409	SWAGELOK LIMITED	UNITED KINGDOM	
11	4167	ASTEC VALVES & FITTINGS PVT. LTD.	INDIA	
12	P240	PRECISION ENGINEERING INDUSTRIES	INDIA	
13	C714	CRANE INSTRUMENTATION & SAMPLING PFT CORP.	UNITED STATES	
14	3630	WESMEC ENGINEERING PRIVATE LIMITED	INDIA	
15	3694	PRECISION ENGINEERING INDUSTRIES	INDIA	
16	C015	CHEMTROLS INDUSTRIES PVT. LTD.	INDIA	
17	S303	SWASTIK ENGINEERING WORKS	INDIA	
18	F146	FLUID CONTROLS LIMITED	INDIA	
19	A345	ARYA CRAFTS & ENGINEERING PVT LTD	INDIA	
20	A240	ASTEC VALVES & FITTINGS PVT. LTD.	INDIA	
21	B213	BAUMER TECHNOLOGIES INDIA PVT.LTD(W058)	INDIA	
22	C220	COMFIT & VALVES PVT. LTD.	INDIA	
23	4303	TRUEWAY ENGINEERING INDUSTRIES	INDIA	
24	J067	METAVAL ENGINEERING PRIVATE LIMITED	INDIA	
25	3937	SHREEMARUTI INSTRUMENTS PVT LIMITED	INDIA	
26	4319	VENTIL FLOWSERVE PRIVATE LIMITED	INDIA	
27	4286	SHARP ENGINEERING	INDIA	
28	3871	PANAM ENGINEERS LIMITED	INDIA	
29	3737	HAVI ENGINEERING INDIA PVT LTD	INDIA	
30	3931	HP VALVES & FITTINGS INDIA PRIVATE LTD	INDIA	
31	4057	MET-LOK VALVES AND FITTINGS	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15FR		**Description :** ANALYSER SHELTER		
Approved Suppliers				
1	3944	STEAM EQUIPMENTS LIMITED	INDIA	
2	C015	CHEMTROLS INDUSTRIES PVT. LTD.	INDIA	
3	3891	ANALYSER INSTRUMENT CO PVT LTD	INDIA	
4	Y006	YOKOGAWA INDIA LIMITED	INDIA	
5	4028	AXIS SOLUTIONS LIMITED	INDIA	
6	3911	ADAGE AUTOMATION PRIVATE LIMITED	INDIA	
7	A361	AXIS SOLUTIONS LIMITED	INDIA	
8	4175	AXIS ENGINEERING INDIA PVT LTD	INDIA	
9	4354	ABB INDIA LIMITED	INDIA	
10	P214	PYROTECH ELECTRONICS PVT LTD	INDIA	
11	4129	EMERSON PROCESS MANAGEMENT INDIA PVT LTD	INDIA	

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TECHNICAL COMPLIANCE STATEMENT

(To Be Signed by Bidder's Principal Corporate Level Signatory on Company Letterhead)

I, ON BEHALF OF M/s _____ CONFIRM THAT THE PROPOSAL OF _____ QUOTED BY M/s_____ FOR THE PDH/PP/U&O PROJECT OF M/S PETRONET LNG LIMITED (PLL) AT DAHEJ, GUJARAT, INDIA AGAINST MATERIAL REQUISITION NO. B862-000-YA-MR-2666 IS IN TOTAL COMPLIANCE TO THE FOLLOWING.

A. SCOPE OF WORK

B. INSTRUMENTATION JOB SPECIFICATION

C. SPECIAL INSTRUCTION TO VENDORS (SIV)

D. TECHNICAL SPECIFICATION

E. ALL STANDARD SPECIFICATIONS, ITP's, DOCUMENTS AND DRAWINGS ATTACHED AS PART OF MR

F. TECHNICAL AMENDMENTS, IF APPLICABLE

AND NO DEVIATION, VARIATION OR RESERVATION WHATSOEVER HAS BEEN MENTIONED IN THE TECHNICAL OFFER. IT IS FURTHER AGREED THAT THE TECHNICAL DETAILS FURNISHED IN OUR OFFER WILL BE REVIEWED BY EIL/PLL DURING DETAILED ENGINEERING STAGE AFTER ORDER AND ANY CHANGE REQUIRED TO MEET THE REQUIREMENTS OF ENQUIRY SCOPE AND SPECIFICATION INCLUDING AMENDMENT(S) (IF ANY) WILL BE INCORPORATED BY US WITHOUT ANY PRICE AND TIME IMPLICATION.

(Bidder's Signature & Stamp)

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Sr No.	COMPLIANCE STATEMENT/ QUERY	BIDDER'S CONFIRMATION/ ANSWER
	Please note that it is mandatory to furnish replies to the technical queries listed below, without which your offer will be considered incomplete.	
1.	Confirmed that compliance to Special Instruction to vendor, scope of work, technical specification, Standard Specifications/drawings, drawings and document with Technical Questionnaire have been submitted with the offer.	
2.	Confirmed that mandatory spares have been quoted as per SIV, Job Specification, EIL Standard Specification and elsewhere mentioned in MR.	
3.	Confirmed that testing & inspection charges have been included in the base price of the group.	
4.	Confirmed that Two Years Operation & maintenance spares have been quoted as per SIV, Job Specification, EIL Standard Specification and elsewhere mentioned in MR.	
5.	Bidder to confirm that Unit Rates for addition / deletion have been quoted as per SIV	
6.	Bidder to confirm that they have provided the unpriced Price Schedule as per the IFB format and quoted for all the items listed therein including supply, installation, transportation, etc. as per MR.	
7.	Bidder to confirm that they have submitted all required documents as per Vendor Data Requirement document of the MR and the SIV.	
8.	Bidder to confirm that they have submitted the signed and stamped Technical compliance statement attached elsewhere in MR. Any deviations / deletions / corrections made elsewhere in the body of the bidding document, will not be taken cognizance of and all such deviations shall be deemed to have been withdrawn by the bidder. Confirm Compliance	

(Bidder's Signature & Stamp)

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RESPONSIBILITY DEFINITION

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued with MR	MK	AJS	KS

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S.No.	DESCRIPTION	RESPONSIBILITY		LOCATION
		VENDOR	SUB-VENDOR	
1.	**SOURCE OF SUPPLY** • Analysers • SO2-H2S analyser • NO-NO2-NOX-NH3 analyser • CO analyser • BTEX Analyser with Detector • VOC Analyser • PM 10 monitoring analyser • PM 2.5 monitoring analyser • Meteorological Instruments • Analyser Shelter • HVAC • Sample handling system • Calibration equipment/gases • Display board system • Display Board Transmission Devices • PC & Printer • UPS			
2.	Design of Sample Handling System (as applicable)			
3.	Design of Analyser panels & cabinets (as applicable)			
4.	Design and Engineering of Analyser shelter			
5.	System Engineering for a) AAQMS b) Display Board System			
6.	Analysers Calibration Including Testing for AAQMS			
7.	Integration and installation of a) AAQMS b) Display Board System			
8.	Factory Acceptance Testing for a) AAQMS b) Display Board System			
9.	Installation of complete Analyser system including Analyser Cabinet / Shelter, laying of sample tubing and interconnection of the various components supplied by vendor at site including site civil works for a) AAQMS b) Display Board System			
10.	Field calibration, testing & commissioning for the complete Analyser system a) AAQMS b) Display Board System			
11.	Site acceptance test for complete Analyser system			

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S.No.	DESCRIPTION	RESPONSIBILITY		LOCATION
		VENDOR	SUB-VENDOR	
	a) AAQMS b) Display Board System			
12.	Site Training for a) AAQMS b) Display Board System			
13.	Warranty			
14.	Overall single point responsibility for complete AAQMS system			

1. Vendor must indicate clearly the responsibilities of each of the agencies in the format attached (Responsibility chart) along with the definition of various agencies as described below:

a) Vendor: The agency who manufactures the analyser / any other item at his manufacturing works and who has quoted for the complete analyser system.
b) Sub-Vendor: Agency who manufactures components and accessories and supply the same to vendor.

2. The responsibility assigned in the format shall be from the agency or location, which meets proven-ness criteria specified elsewhere in the MR

Vendor Seal & Signature

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LOGISTIC SUPPORT FORMATS

FOR

AMBIENT AIR ANALYSER SYSTEMS

FOR

MR No. B862-000-YA-MR-2666

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	30.04.2026	Issued with MR	MK	AJS	KS

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CERTIFICATE FOR LOGISTIC SUPPORT

(a) Certificate for Logistics Support (by Manufacturer)

(To be signed by Manufacturer corporate level signatory on company's letterhead)

1. I, on behalf of, M/s _____ confirm that the ……*…… quoted by us (M/s …….....) for "PDH-PP PROJECT", of M/s PLL at DAHEJ, GUJARAT, against material requisition No B862-000-YA-MR-2666 shall continue to be supported by us. The quoted system shall not be withdrawn from Indian market as a matter of our corporate Policy.

2. I further confirm that in case of placement of order by M/s PLL or its PMC to us, we shall provide backup, engineering, maintenance support and spare parts support of complete system to PLL for a period of minimum 10 years from the date of placement of order. After this period, if the production of spare parts is discontinued, we shall give at least twenty-four (24) months' notice prior to such discontinuation.

3. Spares and services during aforesaid period will be directly supplied by us & not through our authorized representative/ channel partner/ Dealer/ Stockist/ Associates or representative.

4. After expiry of the Warranty Period, M/s……will provide Expert Services Contract to M/s PLL on Man-days Basis. The Man-days shall be consumed by PLL on requirement basis.

(SIGNATURE WITH SEAL)

(AUTHORIZED, CORPORATE LEVEL SIGNATORY)

(* Each of AAQMS System components & Major Bought Out items provided by Vendor/ Sub vendors)

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CERTIFICATE FOR LOGISTIC SUPPORT

(b) Certificate for Logistics Support (by Vendor)

(To be signed by Vendor corporate level signatory on company's letterhead)

5. I, on behalf of, M/s _____ confirm that the ……*…… quoted by us (M/s …….....) for "PDH-PP PROJECT", of M/s PLL at DAHEJ, GUJARAT, against material requisition No B862-000-YA-MR-2666 shall continue to be supported by us. The quoted system shall not be withdrawn from Indian market as a matter of our corporate Policy.

6. I further confirm that in case of placement of order by M/s PLL or its PMC to us, we shall provide backup, engineering, maintenance support and spare parts support of complete system to PLL for a period of minimum 10 years from the date of placement of order. After this period, if the production of spare parts is discontinued, we shall give at least twenty-four (24) months' notice prior to such discontinuation.

7. Spares and services during aforesaid period will be directly supplied by us & not through our authorized representative/ channel partner/ Dealer/ Stockist/ Associates or representative.

8. After expiry of the Warranty Period, M/s……will provide Expert Services Contract to M/s PLL on Man-days Basis. The Man-days shall be consumed by PLL on requirement basis.

(SIGNATURE WITH SEAL)

(AUTHORIZED, CORPORATE LEVEL SIGNATORY)

(* Each of AAQMS System components & Major Bought Out items provided by Vendor/ Sub vendors)

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PERFORMANCE GUARANTEE CERTIFICATE

(To be signed by Manufacturer's corporate level signatory on COMPANY letterhead)

I, on behalf of M/s. _____, certify that in the event of placement of order for AAQM System, by M/s PLL on M/s_____.

a) The AAQM System with its performance certificate shall be supplied by us.
b) M/s. _____, shall stand guarantee for the performance of the complete system at site.
c) Our involvement shall be ensured during commissioning and site acceptance of complete system.
d) We shall provide all required logistic support to M/s._____.
e) With the methodology proposed herein, we M/s _____ shall stand guarantee for the Complete AAQM system as per the specified performance specifications.

(SIGNATURE WITH SEAL)

AUTHORIZED, SENIOR MANAGEMENT LEVEL

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CAPABILITY ASSESSMENT CERTIFICATE

(To be signed by Manufacturer corporate level signatory on COMPANY'S letterhead)

I, _____ on behalf of M/s._____ certify that we have evaluated the facilities available with M/s._____ and approve them for carrying out the following activities:

a) System Engineering
b) System Assembly
c) Component Procurement
d) System Integration
e) Testing & Calibration
f) System Installation
g) System Commissioning

(Tick which one is applicable)

We also confirm that QA/ QC procedure being followed by M/s._____ at their works is similar to those being followed by us at our works.

(SIGNATURE WITH SEAL)

AUTHORIZED, SENIOR MANAGEMENT LEVEL

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एनालाइज़र शेल्टर के लिए मानक विनिर्देशन

STANDARD SPECIFICATION FOR ANALYSER SHELTER

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
					Approved by	
2	10.05.22	Revised and Reissued as Standard Specification	SM/MK	SA/AR	MN	SM
1	27.03.17	Revised and Reissued as Standard Specification	AS	SA	RG	RN
0	30.12.11	Issued as Standard Specification	RK	RG	RP/JMS	DM

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Abbreviations:

AARH	:	Arithmetic Average Root Height
CFC	:	Chlorofluorocarbon
DCS	:	Distributed Control System
DPDT	:	Double Pole Double Throw
Deg C	:	Degree Centigrade
ERTL	:	Electronics Regional Testing Laboratory
HVAC	:	Heating, Ventilation and Air conditioning
NPT	:	National Pipe Threads
ODP	:	Ozone Depletion Potential.
PLC	:	Programmable Logic Controller

Instrumentation Standards Committee

Convener: Mr. Mainak Nandi

Members :
Mr. Arupjyoti Saikia
Mr. Sachin Garg
Mr. Jerry Johnson
Mr. Mayank Kaushik
Ms. K Pratheepa
Mr. Sourav Mukherjee
Mr. R K Gupta (Proj.)

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4.0 INSPECTION AND TESTING 17

5.0 SHIPPING 17

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1.0 GENERAL

1.1 Scope

1.1.1 This specification, together with the data sheets covers the requirements for the design, materials, nameplate marking, inspection, testing and shipping of Analyser Shelter with HVAC system complete with accessories, which are required for housing industrial process analysers and their associated piping, wiring and auxiliary instruments.

1.1.2 The related standards referred to herein and mentioned below shall be of the latest editions prior to the date of the purchaser's enquiry:

ASME	American Society of Mechanical Engineers.
	B 1.20.1 Pipe Threads General Purpose (Inch)
	B 16.5 Pipe Flanges and Flanged Fittings
	B 16.20 Metallic Gaskets for Pipe Flanges
API	American Petroleum Institute
	RP 551 Process Measurement Instrumentation
	RP 555 Process Analyzers
ANSI/ISA	American National Standards Institute / International Society of Automation
	71.04 Environmental Conditions for Process Measurement and Control systems : Airborne Contaminants
EN	European Standard
	10204 Inspection Documents for Metallic Products.
	50288-7 Multi-element metallic cables used in analogue and digital communication and control. Part-7: Sectional specification for instrumentation and control cables.
IS/IEC	Indian Standard /International Electrotechnical Commission
	60079 Electrical Apparatus for Explosive Gas Atmosphere.
	60529 Degree of Protection Provided by Enclosures (IP Code).
	61000-4 Electromagnetic Compatibility (EMC) – Testing and
	61511 Functional Safety - Safety Instrumented System for the Process Industry Sector.
	61285 Industrial Process Control – Safety of Analyser Houses.
IS	Indian Standard
	1554 PVC Insulated (Heavy Duty) Electric Cables for working Voltages up to and including. 1100 Volts
	13947 Specification for Low Voltage Switch gears and Control gears.
NFPA	National Fire Protection Association
	496 Standard for Purged and Pressurized Enclosures for Electrical equipment

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1.1.3 In the event of any conflict between this specification, data sheets, statutory regulations, related standards and codes the following order of priority shall govern:

a) Statutory Regulations

b) Data Sheets

c) Job Specifications (including Special Instruction)

d) Standard Specification

e) Codes and Standards

1.1.4 Purchaser's data sheets specify the minimum acceptable materials. Alternate superior material of construction shall also be acceptable with the consent of Purchaser, provided vendor assumes complete responsibility for the selected materials for their compatibility with the specified operating conditions.

1.2 Bids

1.2.1 Vendor's quotation shall be strictly as per the bidding instructions to vendor attached with the material requisition.

1.2.2 Whenever a detailed technical offer is required, vendor's quotation shall include the following:

a) Compliance to the specifications.

b) Whenever the requirement of detailed specification sheet for analyser shelter is specifically indicated, a detailed specification sheet for each analyser shelter shall be furnished. The material specifications and the units of measurement for various parts in vendor's specification sheet shall be to the same standards as those indicated in purchaser's data sheet.

c) Proven references for each offered analyser shelter in line with clause 1.2.3 of this specification.

d) General arrangement / Layout/ Foot print drawing of each shelter, wherein details like total load/ weight etc. shall also be provided.

e) List of utilities with expected consumption of each shelter.

f) A copy of approval for flameproof enclosure, whenever specified, from local statutory authority, as applicable, such as Petroleum and Explosive Safety Organisation (PESO) in India, along with:

i) Test certificate from recognised test house like Central Institute of Mining and Fuel Research (CIMFR)/ Electronics Regional Testing Laboratory (ERTL) etc. for flameproof enclosure for the specified hazardous protection class, as per relevant standard for all Indian manufactured equipment

ii) Certificate of conformity from agencies like Laboratorie Central Des Industries Electriques (LCIE), BASEEFA, PTB, CSA, FM, Underwriter's Laboratory (UL) etc. for compliance to ATEX directives or other equivalent standards for all equipment manufactured outside India.

g) Deviations on technical requirements will not be entertained. In case vendor has any valid technical reason, they must include a list of deviations tag number wise, summing up all the deviations from the purchaser's data sheets and other technical specifications along with the technical reasons for each of these deviations.

h) Catalogues giving detailed technical specifications, model decoding details and other related information for each type of analyser shelter and other equipment / instruments covered in the bid.

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1.2.3 All items, as offered, shall be field proven and should have been operating for a period of minimum 6 months on the bid due date in similar applications. Items with proto-type design or items not meeting proven-ness criteria specified above shall not be offered.

1.2.4 All documentation submitted by vendor including their quotation, catalogues, drawings, installation, operation and maintenance manual etc. shall be in English language only.

1.2.5 Vendor shall also quote for the following:

a) Unit rate of fresh air duct including its necessary supports and any other item if specified in Purchaser's project documents.

b) Vendor shall provide a list of recommended spare parts for each instruments and system required for two (2) years of normal operation. These spares shall be quoted separately.

c) Any special tools and tackles needed for maintenance work. In case no special tools are necessary for maintenance for the offered shelter, vendor must certify the same in their offer.

1.3 Drawings and Data

1.3.1 Detailed drawings, data, catalogues and manuals required from the vendor are indicated by the purchaser in vendor data requirement sheets.

1.3.2 Final documentation consisting of design data, installation procedure, operation and maintenance manual (including HVAC), copy of type test certificates etc. submitted by vendor after placement of purchase order as per vendor data requirement shall include the following, as a minimum:

a) Specification sheet for analyser shelter and its accessories.

b) Certified drawing for each analyser shelter, which shall provide following details;

i. Overall / Mounting Details, Equipment layout of complete shelter along with foundation area of the shelter (including HVAC and Calibration Cylinder Manifold area) in millimetres.

ii. Clearance space required for maintenance work.

iii. Schematic diagram for the complete assembly including utilities required for the shelter.

iv. Heat load calculations and dehumidified flow rate calculation.

v. HVAC related documents like datasheets, SLD, Motor datasheets, Control narrative Write-up with Instrumentation & Control Automation.

1.4 Definitions

1.4.1 Analyser shelter

Enclosed prefabricated building or part of a building containing process analysers and associated equipment where streams for analysers are brought in and which is regularly attended by authorised personnel for operation and maintenance.

1.4.2 Analyser Cabinet

Small housing (inside the Analyser Shelter) in which analysers are installed individually or grouped together. Maintenance is performed from outside the cabinet with door(s) open.

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2.0 DESIGN AND CONSTRUCTION

2.1 General Requirements

2.1.1 Analyser shelters are provided for housing industrial process analysers and their associated piping, wiring and auxiliary instruments. The analyser shelters are designed :

a) To create a space within a hazardous area (Zone-1) in which under normal operating conditions a non-hazardous atmosphere exists, so that testing or calibration of analysers and maintenance can be performed with opened casings and electrical circuits alive.

b) To create a controlled environment in which analysers and their associated equipment are adequately protected against adverse weather conditions.

2.1.2 The analyser shelter shall be fully prefabricated, assembled, tested and shall be supplied as ready-to-install at project site with all items including analysers and their accessories duly mounted, wired, tubed and tested before shipment.

2.1.3 The arrangement of equipment shall be such that it provides enough access to front/back/sides of the equipment as necessary during normal operation as well as during start up and maintenance. Sufficient space shall be provided for workbench, signal and power cables entries and routing, power sockets, utility supplies, auxiliary and control equipment. Suitable arrangements shall also be made for locating devices like printers etc. near each equipment.

2.1.4 Shelters shall be equipped with all safety measures like panic bar at the doors, Emergency alarm push buttons, Gas detectors, Fire detection system, warning panels, Fire extinguishers, wash basin etc.

2.1.5 Shelter shall be provided with ventilation and air-conditioning to maintain the temperature and humidity suitable for the analysers stable performance, maintenance and human comfort.

2.1.6 Shelter shall be provided with both internal and external lighting for proper operation and maintenance.

2.1.7 All electrical equipment, fittings, fixtures shall be Flame proof suitable for hazardous area classification.

2.1.8 Analyser shelter shall be sized considering 25 % additional spare space and facilities like HVAC load, power load etc. for future use unless any other specific requirement indicated in requisition.

2.1.9 The design of electrical / electronic components shall be in compliance with the electromagnetic compatibility requirements as per IEC 61000-4.

2.1.10 Components installed in analyser shelter shall have weatherproof protection rating of minimum IP65 for components installed outside and IP55 for components installed inside.

2.2 Construction

2.2.1 The shelter shall be constructed using specified materials capable of satisfying all the functional requirements and shall not create any safety hazards.

2.2.2 The design and construction of the shelter shall be self-supporting type and shall be sized to house required analysers, their sample conditioning system and other accessories. Shelters shall also be provided with suitable transportation arrangement.

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2.2.3 The base structure of the shelter shall be constructed using suitable size 'I' beams, channels, and angles, welded properly and adequately. All structural members shall be sized to ensure structural rigidity and to prevent deformation during dragging, lifting, loading and unloading operations of the shelter.

2.2.4 The floor shall be fabricated from anti slip and non-corrosive low copper Aluminium plates as a minimum, strong enough to withstand load of all equipment and additional load of 800 Kg (equivalent to at least 10 nos. of maintenance personnel standing inside shelter). It shall also be unaffected during transportation due to shock and vibration forces and shall be sealed to prevent any loss of ventilation pressure.

2.2.5 External sidewalls shall be ribbed interlocking stainless steel sheet of thickness 2 mm and internal walls shall be stainless steel sheet of thickness 2 mm. The walls of the shelter shall be strong enough to take load of the rack mounted analysers, related sample conditioning system and associated accessories.

2.2.6 The shelter roof shall be capable of withstanding the combined weight of at least 320 Kg (equivalent to 4 persons on roof) without permanent deformation and shall be sealed properly to prevent loss of ventilation pressure and entry of rain and jet water.

2.2.7 Lifting of the complete shelter along with all analysers, sample conditioning systems and associated accessories mounted in it shall be assured by means of suitably designed lifting lugs.

2.2.8 The walls and roof shall be insulated by using stone wool of high density and low thermal coefficient, of adequate thickness commensurate with the HVAC design.

2.2.9 The shelter shall be provided with a main door and an emergency door opposite to main door. Both the doors shall be opening outwards, provided with wire reinforced safety glass window, automatic spring door closer opening by simple push, fitted with panic bar for use in case of emergency. The main door shall be provided with outside pad lock holes. Warning light shall be provided at both the Main door and the emergency door indicating the Hydro carbon presence within the shelter.

2.2.10 Extension roof (overhang) made of stainless steel sheet shall be provided all along the walls of the shelter and over the sampling system for protection of the sampling system and maintenance personnel from the direct weather conditions. The extension roof shall be overhung at least 1000 mm outside the analyser shelter on all sides.

2.2.11 A nameplate with the analyser shelter number shall be fixed near the main door and emergency door. Tag numbers of the analysers shall be fixed near the main door. Tag Numbers of each analyser, sampling system, and other components shall be fixed near the respective items. All inlet & outlet tube/ pipes shall be provided with tag number & proper identification numbers engraved in the stainless steel plate. All electrical wires/ leads shall be identified inside the junction box/ equipment by proper plastic ferrules. All cables shall be identified with stainless steel plate engraved tag nos./ identification numbers.

2.2.12 Provision shall be made for keeping all fast loop devices, distribution devices, gas cylinders and manifolds outside the shelter. A suitable excess flow check valve shall be provided in each sample line to limit the sample flow not exceeding thrice the normal flow in the event of tube rupture/opening of the tube down the line.

2.2.13 Multicable Cable Transit (MCT Blocks with Frames) shall be provided for Cables / Tubes entry (separate MCT frames / blocks for signal cables, power cable and tubes) to the analyser shelter.

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2.2.14 All pipes which introduce flammable gases inside shelter shall have readily accessible shut off valves.

2.3 Safety Considerations

2.3.1 Analyser shelter shall be provided with pressurisation/purging with fresh air with air changes as per specifications to make it safe for installation, operation and maintenance of analysers.

2.3.2 All junction boxes and electrical equipment shall be explosion proof 'Exd' as per hazardous area classification.

2.3.3 All analysers and equipment installed shall be suitable for working as per inside hazardous area classification even without fresh air purging / pressurisation of the Shelter. Type X purging as per NFPA 496 shall be provided wherever purging is required

2.3.4 The equipment which are not suitable for inside area shall be de-energised in case of ventilation failure and gas detection.

2.3.5 Warning panels, alarm annunciator and repeat contacts to control room shall be provided for safety related parameters.

2.3.6 Gas detection, fire detection and oxygen deficiency detection shall be provided as per specifications. Minimum 6 nos. of HC detectors (3 nos. in Fresh Air intake and balance in shelter) shall be provided.

2.3.7 A PLC system shall be provided to execute safety logics for Analyser shelter. PLC shall have redundant CPU and Power Supply. PLC shall be mounted in Ex-proof (Exd) enclosure only for the specified area classification. PLC fault shall be annunciated.

2.3.8 Vendor shall consider minimum 3 meter height above the nearest highest point of platform handling hydrocarbon (as specified in requisition) for safe disposal from Common Analyser vent line from Shelter to atmosphere. All required Pipe, tubes, NRV (if required), flame arrestor along with supports for this purpose shall be provided by the vendor.

2.4 Warning Panels

2.4.1 The following safety related local alarms / indicators shall be generated and displayed:

a. Ventilation failure
b. Flammable gas detected (> 20%)
c. Fire detected
d. Oxygen deficiency
e. Gas detection Instrument fault
f. Manual emergency (Panic)

2.4.2 These alarms shall be supported at the following locations:

a. Inside shelter on annunciator panel
b. Near shelter doors on warning panels
c. Potential free repeat contacts shall be provided for connection to Purchaser's Control Room.

2.5 Hazardous Area Classification

2.5.1 Hazardous area classification shall be as indicated in the job specification / data sheet for outside the shelter. For Shelter located in hazardous area, area for inside the analyser shelter

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shall be considered as IEC Zone-1, Gas Group same as outside gas group considering pressurization failure condition.
Whenever hydrogen gas is used as fuel gas or carrier gas, the associated fittings, enclosures and all items housed within the panel / shelter shall be made flameproof to IEC Zone 1 Group IIC requirements. In such case, Gas chromatographs/Analyser shall be suitable for IEC Zone 1 Group IIB + H2 as a minimum.

2.5.2 Non explosion protected equipment will be de-energized in case of pressurization failure and gas detection.

2.5.3 Restart of such equipment shall not be possible without appropriate authorization.

2.6 HVAC System for Analyser Shelter

2.6.1 Vendor shall design, engineer, procure, manufacture, inspect & test at works, shop-paint, pack & forward, transport, supply install, test and commission the HVAC System for analyser shelter complete with all auxiliaries required for efficient & satisfactory operation. HVAC system shall be Air cooled Package AC type (Air cooled condenser designed for ambient air temperature upto 55 deg C) unless specified otherwise. Vendor shall carry out Performance Guarantee (PG) test at site to prove the Guaranteed Parameters. The specifications for HVAC system shall be as detailed in 2.6.2 for analyser shelters located in hazardous area and 2.6.3 for analyser shelters located in safe area.

2.6.2 **HVAC System for Analyser Shelter located in Hazardous Area**

2.6.2.1 Analyser shelters shall be air conditioned and pressurized to prevent the entry of flammable gases & vapours and combustible dusts.

2.6.2.2 Air Conditioning and pressurization shall be achieved by providing packaged type HVAC units (1 Working + 1 Standby) with automatic changeover in case of failure of running unit. Refrigerant used shall be non-CFC and non-ODP environment friendly (e.g. R-134a, R-407c, R410a or equivalent). Package AC shall be provided with fine filters of 5 microns with minimum 95% efficiency.

2.6.2.3 Fresh air shall be taken from nearest safe area (minimum 3-meter height above the nearest highest point of platform handling hydrocarbon (as specified in requisition) through fresh air duct. The Ducts shall be completely leak proof while passing through hazardous area. Fresh air stack duct with rain cap shall be of Stainless Steel, welded in construction of minimum 2 mm thickness. Loss of pressurization shall initiate an Audio Visual Alarm.

2.6.2.4 Fresh air make up requirements shall be calculated by the vendor based on the requirements as specified in NFPA 496, (Latest Edition), i.e. where a release of flammable gas or vapour within an enclosure can occur either in normal operation or under abnormal conditions, protection shall be provided by diluting with air to maintain the concentration of flammable gas, vapour, or mixture to less than 25% of its lower flammable limit of any individual flammable gas or vapour entering the enclosure. However, minimum 5 air changes shall be provided as per IEC 61285 for ventilation purpose.

2.6.2.5 Inside temperature rise shall be limited to 5^0 C above ambient, by fresh air from pressurization system, in case of failure of AC system. Vendor shall confirm that all Analyers installed inside analyser shelters are suitable for continuous operation in this temperature (Max. ambient +5°C).

2.6.2.6 In case of failure of Air-conditioning system and rise of temperature inside Analyser Shelter, vendor shall provide high temperature pre alarm inside shelter. A separate potential free contact of this alarm shall be provided in alarm J.B. for connection to control room also. The power to analyser shall be cut off in case of high temperature.

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2.6.2.7 Vendor shall submit heat load calculation for review during post order engineering. Heat load on account of fresh air requirement shall be considered while calculating the capacity of air conditioners.

2.6.2.8 Shelter internal positive pressure shall be maintained at 2.5 mm WG minimum. Relief dampers shall be provided to exhaust room air at 5 mm WG over pressure. Loss of pressurisation shall initiate an audio-visual alarm.

2.6.2.9 All equipment shall be suitable for operation in their respective area classification. For analyser shelters located in classified area (Zone-2, Gr. IIA/IIB/IIC), HVAC unit is required to be explosion-proof. All electrical & instrumentation shall be suitable for applicable Hazardous Area Classification. All flameproof equipment manufactured locally (within India), the testing shall be carried out by any of the approved testing houses –CIMFR / ERTL etc. The item shall, in addition, bear the valid certification from PESO and also the manufacturer shall hold a valid BIS license.

All equipment manufactured abroad shall be certified by any statutory authority like Laboratorie Central Des Industries Electriques (LCIE), British Approval Service for Electrical Equipment in Flammable Atmospheres (Baseefa), Factory Mutual (FM), Underwriters laboratories (UL) etc. for compliance to ATEX directives or other equivalent standards. All these equipment/ instruments/systems shall additionally have the approval of Petroleum and Explosives Safety Organisation (PESO), Nagpur, if installed in INDIA and the same is mandatory.

2.6.2.10 Chemical Filter Unit shall be provided in the fresh air intake to protect the electronic equipment installed inside the analyser shelters against corrosive gases like H_2S, SOx, NO_X etc. Refer Cl. No. 2.7 for detailed Chemical Filter unit requirement.

2.6.3 **HVAC System for Analyser Shelter located in Safe Area**

2.6.3.1 Analyser shelters are to be air conditioned and pressurized to prevent the entry of dust.

2.6.3.2 Air Conditioning and pressurization shall be achieved by providing packaged type HVAC units (1 Working + 1 Standby) with automatic changeover in case of failure of running unit. Refrigerant used shall be non-CFC and non-ODP environment friendly (e.g. R-134a, R-407c, R410a or equivalent). Package AC shall be provided with fine filters of 5 microns with minimum 95% efficiency.

2.6.3.3 Minimum 5 air changes shall be provided as per IEC 61285 for ventilation purpose.

2.6.3.4 Inside temperature rise shall be limited to 5^0 C above ambient, by fresh air from pressurization system, in case of failure of AC system. Vendor shall confirm that all Analyers installed inside analyser shelters are suitable for continuous operation in this temperature (Max. ambient +5°C).

2.6.3.5 In case of failure of Air-conditioning system and rise of temperature inside Analyser Shelter, vendor shall provide high temperature pre-alarm inside shelter. A separate potential free contact of this alarm shall be provided in alarm J.B. for connection to control room also. The power to analyser shall be cut off in case of high temperature.

2.6.3.6 Vendor shall submit heat load calculation for review during post order engineering. Heat load on account of fresh air shall be considered while calculating the capacity of air conditioners.

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2.6.3.7 Shelter internal positive pressure shall be maintained at 2.5 mm WG minimum. Relief dampers shall be used to exhaust room air at 5 mm WG over pressure. Loss of pressurization shall initiate an audio-visual alarm.

2.6.3.8 Chemical Filters shall be provided in the fresh air intake to protect the electronic equipment installed inside the analyser shelters against corrosive gases like H_2S, SOx, NO_X etc. Refer Cl. No. 2.7 for detailed Chemical Filter unit requirement.

2.6.4 **Inside Conditions to be maintained**

Following inside conditions are to be maintained and guaranteed by vendor throughout the year:

- Dry bulb temperature : 26°C ± 1°C
- Relative humidity : 50%+/-5%
- Air Quality : G1 as per ANSI/ISA-71.04-2013

2.6.5 **Outdoor Design Conditions**

Outside design conditions shall be considered as follows:

Temperature ^{0}C	Dry Bulb ^{0}C	Wet Bulb^{0}C
Summer	#	#
Winter	#	#
Monsoon	#	#

For these Project specific conditions, Vendor/ Contractor shall refer ISHRAE (Indian Society of Heating, Refrigerating and Air Conditioning Engineers) Handbook unless specified elsewhere in Tender / MR.

2.6.6 **Spares**

Spares for commissioning and start up as required shall be provided by vendor without any additional time & cost implication.

2.6.7 Vendor shall supply Fresh air suction duct completely leak proof. Fresh air stack duct with rain cap shall be of Stainless Steel, welded in construction of minimum 2 mm thickness. Loss of pressurization shall initiate an Audio Visual Alarm. Support of duct is to be taken from nearby available structure.

2.7 Chemical Filter Unit

2.7.1 The design, selection, manufacture and supply of chemical filter units for the duty specified shall be in vendor's scope. Chemical filter units are required to be installed in fresh air circuit. Chemical filter unit shall be complete with pre-filter, after filter, fresh air blowers (1 working + 1 standby), chemical media sections and accessories.

2.7.2 Chemical filters shall be able to achieve G1 environment inside the room from outside GX environment as per ANSI/ISA-71.04-2013 standard

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Parameters	**G1 (Indoor)** mm^3/m^3(cubic millimeters per cubic meter) parts per billion	**GX (Outdoor)** mm^3/m^3(cubic millimeters per cubic meter) parts per billion
H_2S	< 3	50
SO_2 / SO_3	< 10	300
Cl_2	< 1	10
NO_X	< 50	1250

2.7.3 Chemical filter shall be designed for the chemical media life of minimum 1 year (considering gas concentrations as stated above). Chemical Filter supplier shall furnish the calculations/ nomographs etc. in support of the chemical media life duly vetted (signed, stamped with relevant date of submission) by media manufacturer at post order stage

2.7.4 Chemical filter unit shall be skid-mounted cubicle for horizontal installation. Blower section can be accommodated inside the chemical filter unit or can be a separate skid.

2.7.5 Two stage deep bed chemical filters shall be provided - first bed shall contain required quantity of chemical media of activated carbon and activated alumina as a base material, together made into number of single pellets (i.e. a single pellet made up of a mixture of activated alumina + activated carbon) with alkali impregnation as per media manufacturer standard. Second bed shall contain required quantity of chemical media of activated alumina pellets impregnated with oxidizing agent such as Potassium Permanganate or Sodium Permanganate etc. as per media manufacturer standard. Activated Carbon shall not be used in isolation in any bed and it is not permitted either as impregnated form or as separate pellet in blend media. Chemical media in both beds must have min. 15% moisture for effective neutralization & oxidation reactions to take place.

2.7.6 Chemical Media shall be Non-flammable suitable to work under extreme humidity and temperature conditions as per applicable site conditions & Environmental norms/regulations.

2.7.7 Chemical Media bed sections suitable for removal of specified gases shall be housed in an adequately rigid & reinforced sheet metal enclosure, with flanged inlet & outlet connections, inspection cover/manhole.

2.7.8 Chemical air filter unit shall be selected considering the velocity across filter as ~100 FPM. Quantity of chemical media shall be calculated considering above velocity with residence time furnished and guaranteed by chemical media manufacturer for the proposed media.

2.7.9 Fresh air blowers for chemical filter unit shall be provided with 1 working + 1 standby configuration (with automatic changeover in case of failure of running unit) complete with drive & back draft dampers, cleanable type filters and bird screen etc.. A manual blower selector switch will also be provided to alternate between the blowers.

2.7.10 The pre-filters at inlet & fine filters at outlet shall be capable of removing dust particles of 10 microns with 90% efficiency & of 5 microns with minimum 95% efficiency respectively.

2.7.11 For outdoor located chemical filter units, fan shall be in blow through mode with respect to chemical media filters and other particulate filters. **Intake of Fresh air through the main HVAC blower is not acceptable.**

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2.7.12 Chemical filter unit should have adequate provision for easy removal & servicing of filter packs. Necessary handholes / Media filling nozzles with blind flange, gaskets and fasteners along with 1 set of spare gaskets & fasteners for each size and type shall be provided.

2.7.13 Fan shall be selected corresponding to air density at lowest ambient temperature. Fan curves and Motor power selection calculations shall be furnished accordingly.

2.7.14 Unit shall be suitable for outdoor/indoor installation as applicable & continuous operation. The complete unit shall be properly mounted on the foundation and shall be provided with interconnecting ducting upto fresh air opening of air cooled package AC unit. It shall be painted as per painting specifications of the Bidding document. It should have adequate provision for easy removal & servicing of filter packs.

2.7.15 Chemical Filter media shall be supplied in separate packed containers for filling at site, Vendor shall furnish the procedure for media filling for purchaser's reference. Chemical media present in the containers shall be identified with authentic documents from media manufacturer indicating type of media, year of manufacture, batch number of media, test certificate of media etc.

2.7.16 A Certificate/undertaking from media manufacturer shall be furnished indicating the suitability of the proposed media for the specified application along with guaranteed gas removal capacity values with guaranteed life against applicable corrosive (H2S, SOx, NOx, Cl2, etc.) Type Test certificates of H2S Gas removal capacity for the offered media in accordance with ASTM D6646 or equivalent from an independent laboratory shall be furnished by vendor which shall establish the guaranteed H2S removal capacity of the proposed media. Gas removal of capacity of H2S for the chemical media should not be less than 12%. Purchaser reserve the right to get the supplied chemical media tested independently at their end to ascertain the quality of the media.

2.7.17 Chemical Filter Unit shall be provided with inclined tube manometer or Differential pressure gauge or Magnehelic mechanical gauge for measurement of differential pressure across filters.

2.8 Power Supply

2.8.1 Unless otherwise specified, the following power supplies shall be provided for each shelter at one point near the shelter by owner. Further distribution step down etc. as per requirement shall be done by the vendor:

i) 415 VAC, 50 Hz, 3 phase with neutral for the HVAC system.

ii) 240 VAC / 110 VAC 50 Hz Single phase UPS for Analyser, PLC alarm system, horn and other related accessories.

240V 50Hz Single phase for lighting (internal and external) system of the shelter and heat tracing (as applicable) shall be developed by vendor from 415 VAC power supply.

2.8.2 The supply voltage fluctuation of ±10% and supply frequency fluctuation of ±3 Hz from the specified value, shall not affect the system performance.

2.8.3 The size and number of incomers shall depend on load and distance and shall be finalised during detail engineering. Vendor shall provide necessary terminal sizes and suitable cable glands.

2.8.4 Main switches for all three-power supplies shall be mounted outside the analyser shelter, which shall be weather proof to IP65 and explosion proof suitable for the specified hazardous area classification. The power supply cables will be terminated after the main switches inside the shelter in different junction boxes with terminals and switch fuse unit for

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power distribution to the relevant equipment/ items. Individual switches shall be provided for each instrument for independent de-energisation of the items.
'Power Supply ON' indication shall be provided on the main power supply line to each analyser PDB.

2.8.5 Two power sockets of 240 VAC, 50 Hz non-UPS supply for electrical tools or test equipment shall be provided at two opposite corners of each shelter.

2.9 Other Utilities

Owner shall provide utilities at one point near each shelter like Steam, Instrument Air, Cooling water, Nitrogen, Service water (as applicable and required) for which job specifications/ Special instructions to vendor / datasheet shall be referred by vendor. Further distribution shall be done by vendor as per the requirement.

Vendor shall furnish the list of utilities required with expected consumption.

2.10 Lighting

2.10.1 Power supply for lighting inside and outside the shelter shall be 240 V, 50 Hz non-UPS.

2.10.2 Internal lighting shall be provided by LED tubes / lamps to provide illumination of 300-400 lux at all places on the floor.

2 10.3 External lighting shall be under overhangs to provide illumination sufficient for maintenance / repair work.

2.10.4 Lighting fixtures inside and outside the shelter shall be suitable for the hazardous area classification specified.

2.10.5 Lighting switch shall be provided outside the shelter near to the main door.

2.11 Terminal Housing

2.11.1 The terminal housing shall be suitable for the area classification indicated in the purchaser's data sheets. Unless otherwise specified, the enclosure shall comply with the following requirements as a minimum:

Weather proof housing:	IP-55 as per IEC-60529
Flameproof housing:	Flameproof/Explosion proof i.e., Ex (d) as per IEC 60079

Flameproof housing shall also be weather proof.

2.11.2 All cables shall terminate on the terminal blocks in all vendor-supplied equipment. Separate terminal blocks shall be provided for power and signal cables. Unless otherwise specified, terminals shall be suitable for terminating following conductor sizes, as a minimum:

Signal cables : 1.5 / 2.5 sq. mm

Power cables : 6 sq. mm

Whenever Power Supply cables of higher conductor sizes are provided by Purchaser suitable Terminal in Power JB shall be provided.

Separate Power Junction boxes with suitable terminals shall be provided in case instrument power terminals available as standard are not suitable to accommodate the required cable conductor sizes.

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2.12 Tubing / Wiring

2.12.1 All safety valve outlets shall be terminated in a common header of 2" NB schedule 80S Stainless Steel 304 pipe and single outlet shall be provided outside the shelter with one non-return valve and lock open type 1" ball valve. Similarly all vents to atmosphere shall be terminated in a similar 2" NB Schedule 80S Stainless Steel 304 pipe and single outlet shall be provided with non-return valve and Lock open type 1" ball valve.

2.12.2 All atmospheric gas outlet line shall be equipped with protection from climatic condition.

2.12.3 All tubing work shall be done by using ¼" OD or 1/8" OD SS316L tube and flareless double compression type fittings of SS 316.

2.12.4 All wiring/ tubing and all other erection work shall be done in accordance to API RP 551

2.12.5 All cable entries/outlets in the junction boxes/ distribution boxes etc. and to the analyser shall be provided with double compression type certified flameproof cables glands suitable for the indicated hazardous area. The material of the same shall be Nickel-plated brass/ SS as specified in job specifications/Special Instructions to vendor.

2.12.6 All cabling/wiring works inside the shelter shall be in accordance with the international standard/ industry practice for similar application. However the cables shall be armoured as a minimum.

2.12.7 Dimensions and layout of each shelter shall be provided by contractor for Owner / EIL review before taking up for fabrication.

2.13 Hook up of Analyser Shelter

2.13.1 End Connections shall be provided for all interconnections (fast loop return, sample return, utilities, flare, vent, drain etc.) as specified in purchaser's data sheet for their hook up.

2.13.2 In case end connection for hook up of vendor's standard supply is different than that specified in the purchaser's data sheet, vendor should include the required hook up material in their scope of supply.

2.13.3 Unless otherwise specified, end connection details shall be as below:

a) Threaded end connections shall be NPT as per ASME B 1. 20.1.

b) Flanged end connections shall be as per ASME B 16.5

c) Grooves of ring type joint flanges shall be octagonal as per ASME B 16.20.

d) Flange face finish shall be as per ASME B 16.5.The face finish as specified in the data sheets, shall be as follows:

125 AARH : 125 to 250 micro inch AARH
63 AARH : 32 to 63 micro inch AARH

2.14 Foundation

2.14.1 The analyser shelter shall be installed on 200 mm high concrete pedestal provided on paved area in the plant by owner. The pedestal shall be extending minimum 1 meter on two sides, 2 meters on the side of HVAC and its opposite sides around the footprint of analyser shelter.

2.14.2 Analyser shelter shall be supplied with base channel of min. 150 mm height which will be bolted to the pedestal.

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2.14.3 Vendor shall arrange all equipment outside the shelter including HVAC in such a manner that they are accommodated on the pedestal.

2.14.4 All civil works necessary to install the shelter on pedestal and any residual civil work to provide additional foundation for any accessory shall be in Vendor scope.

2.15 Painting

2.15.1 Non SS parts of the analyser shelter shall be treated and painted as follows:

a) All surfaces including structures shall be sand blasted and grinded smooth and free of scale, rust etc.

b) Chemical treatment shall be done to remove rust, oil, entrapped impurities and other foreign materials.

c) Exterior and inside colour of shelter shall be finalized during detailed engineering.

3.0 NAMEPLATE

Each analyser shelter shall have a stainless steel nameplate attached firmly to it at a visible place near the main and emergency doors, furnishing the following information:

a) Tag number as per purchaser's data sheet.

b) Manufacturer's serial number (If any).

c) Manufacturer's name/trade mark.

d) Area classification in which the shelter can be used.

e) Size of shelter.

4.0 INSPECTION AND TESTING

Purchaser reserves the right to inspect and witness testing at vendor's works as per inspection test plan. All these tests shall be completed by the vendor and test report shall be submitted to purchaser for scrutiny.

5.0 SHIPPING

5.1 All threaded and flanged openings shall be suitably covered to prevent entry of foreign material.

5.2 Glass windows shall be covered with thermocol sheet of appropriate thickness to avoid damage during transport.

5.3 Shipping breaks shall be provided in all equipment, which are supplied in installed condition inside the analyser shelter. Equipment, which is likely to damage during shipment, shall be packed separately for shipment.

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प्रोसेस प्रवाह विश्लेषक के लिए मानक विनिर्देशन

STANDARD SPECIFICATION FOR PROCESS STREAM ANALYSER

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
					Approved by	
6	27.02.23	Revised and Reissued as Standard Specification	JS	AKS	MN	SM
5	31.10.17	Revised and Reissued as Standard Specification	IS	KS	RG	RN
4	30.03.12	Revised and Reissued as Standard Specification	CS	RG	RP/JMS	DM
3	27.09.06	Revised and Reissued as Standard Specification	RP	TGM	PM	VC
2	01.11.96	Revised and Reissued as Standard Specification	RK	BRS	RB	AS

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Abbreviations:

AARH	Arithmetic Average Roughness Height
DC	Direct Current
DCS	Distributed Control System
EMI	Electro Magnetic Interference
HART	Highway Addressable Remote Transducer
HVAC	Heating Ventilation and Air conditioning
LCD	Liquid Crystal Display
LED	Light Emitting Diodes
NPT	National Pipe Thread
PTFE	Poly Tetra Fluoro Ethylene
RAM	Random Access Memory
RFI	Radio Frequency Interference
SPDT	Single Pole Double Throw
SS	Stainless Steel
CS	Carbon Steel
Al	Aluminium

Instrumentation Standards Committee

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Members : Mr. Arupjyoti Saikia
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1.0 GENERAL

1.1 Scope

1.1.1 This specification, together with the data sheets, covers the requirements for the complete design, materials, fabrication, nameplate marking, inspection, testing and shipment of process stream analysers and accessories. This standard specification shall be applicable for all types of process stream analysers irrespective of whether separate specifications are included or not in this specification.

1.1.2 The related standards referred to herein and mentioned below shall be of the latest editions prior to the date of the purchaser's enquiry:

ASME	American Society of Mechanical Engineers.	
	B 1.20.1	Pipe Threads, General Purpose (Inch).
	B 16.5	Pipe Flanges and Flanged Fittings.
	B 16.20	Metallic Gaskets for Pipe Flanges.
	B 16.34	Valves – Flanged, Threaded and Welding End.
	B 31.3	Process Piping
API	American Petroleum Institute	
	RP 551	Process Measurement Instrumentation
	RP 552	Transmission Systems
	RP 554	Process Control Systems
	RP 555	Process Analyzers
ASTM	American Society for Testing and Materials	
	G93	Standard Practice for cleaning methods and cleanliness levels for material and equipment used in oxygen-enriched environments.
EN	European Standards.	
	EN 10204	Inspection Documents for Metallic Products.
IS/IEC	Indian Standards/ International Electro Technical Commission.	
	IS/IEC 60079	Explosive Atmosphere -Part 0: Equipment - General Requirements.
	IS/IEC 60529	Degree of Protection Provided by Enclosures. (IP Code)
	IS/IEC 61000-4	Electromagnetic Compatibility (EMC) for Industrial Process Measurement and Control Equipment.
	IS/IEC 61285	Industrial Process Control - Safety of Analyzer Houses
	IS/IEC 60825-1	Safety of Laser Products Part-1.
	IS/IEC 60746	Expression of performance of Electrochemical Analyzers.
	IS/IEC 61115	Expression of Performance of Sample Handling Systems for Process Analyzers.
NFPA 496	National Fire Protection Associations – Purged and Pressurized Enclosures for Electrical Equipments.	

1.1.3 In the event of any conflict between this standard specification, job specification/data sheets, statutory regulations, related standards and codes, the following order of priority shall govern:

a) Statutory Regulations
b) Datasheets
b) Job Specification (Including Special Instructions)
c) Standard Specification
d) Codes and Standards

1.1.4 In addition to meeting the purchaser's specification in totality, vendor's extent of responsibility shall include the following:

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a) Purchaser's data sheet indicates the type of analyser and the minimum sample conditioning system requirements. Vendor shall be responsible for the selection of proper analyser and design of the sample conditioning system to analyse the component/components of interest within the stated performance requirements.

b) Vendor shall carry out complete application engineering of the process stream analyser so as to achieve the desired analysis within stated performance requirements.

c) Vendor shall provide all hardware and software, as necessary, to meet the functional requirements specified in the purchaser's specifications.

d) Vendor shall provide complete data to purchaser for successfully providing serial communication with purchaser's host system i.e. DCS when specified in the purchaser's specification as per required format.

e) Purchaser's data sheets indicate the minimum requirements of material of construction for the analyser and its sample conditioning system. Alternate superior material of construction shall also be acceptable provided vendor assumes complete responsibility of the selected material for any part of the analyser system so as to be compatible with the process stream and its operating conditions and surrounding atmosphere as specified in purchaser's data sheet.

f) Vendor's recommendation regarding Regular Maintenance for long term smooth functioning of Analysers at site shall be furnished along with offer.

1.2 Bids

1.2.1 Vendor's quotation shall be strictly as per the bidding instruction to vendor attached with the material requisition.

1.2.2 Whenever a detailed technical offer is required, vendor's quotation shall include the following:

a) Compliance to the specifications.

b) A detailed specification sheet for each analyser, which shall provide information regarding type, materials of construction, performance specification and accessories of analyser. The material specification and units of measurement for various parts in vendor's specification sheets shall be to the same standards as those indicated in purchaser's data sheets.

c) A detailed drawing showing various components of sample conditioning system and their piping/tubing hook-up arrangement including sample return, vent, utilities connection and requirement of heat tracing (i.e electrical or steam tracing), as necessary.

d) Sample transportation time calculations for the specified distance between sample point and analyser indicating sample flow rate and the recommended size of the sampling tube. Transportation time calculation shall be carried out ensuring the following:

i) No deterioration of sample takes place.
ii) No condensation shall occur in the sample line.
iii) Response time specified in datasheet is met.

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e) Calibration gas cylinder calculations considering six months of continuous operation with once a week calibration. The calculation sheet shall indicate the rate of gas consumption and specification of gases including composition, concentration, accuracy and shelf life of calibration blend.

f) References gas cylinder calculations considering six months of continuous operation. The calculation sheet shall indicate the rate of gas consumption and specifications of the reference gas.

g) Proven references for each offered model of analyser inline with clause 1.2.3 of this specification.

h) A copy of approval for intrinsically safe/flameproof enclosure, whenever specified, from local statutory authority, as applicable, such as Petroleum and Explosives Safety Organisation (PESO), Nagpur in India, along with:

   i) Test certificate from recognised house like Central Institute of Mining & Fuel Research (CIMFR)/ Electronics Regional Testing Laboratory (ERTL) etc. for flameproof enclosure and/or intrinsic Safety, as specified in the datasheet, as per relevant Indian Standard for all Indian manufactured equipments.

   ii) Certificate of conformity from agencies like Laboratorie Central Des Industries Electriques (LCIE), British Approval Service for Electrical Equipment in Flammable Atmospheres (Baseefa), Factory Mutual (FM), Physikalisch-Technische Bundesanstalt (PTB), Canadian Standards Association (CSA), Underwriters Laboratories (UL) etc. for compliance to ATEX directives or certificate of conformity from IECEx or other equivalent recognised standards for all equipment manufactured outside India.

i) Utility requirements and their consumption i.e. instrument air, cooling water, steam etc. along with their process conditions like flow, pressure and temperature.

j) Power consumption for each analyser and its accessories for 110 V / 240 V AC UPS, & 415 V / 240 V AC non-UPS.

k) HVAC requirements i.e. heat load, humidity particulate/chemical filtration etc.

l) Deviations on technical requirements shall not be entertained. In case vendor has any valid technical reason, they must include a list of deviations tag number wise, summing up all the deviations from the purchaser's data sheets and other technical specifications along with the technical reasons for each of these deviations.

m) Catalogues giving detailed technical specifications, model decoding details and other related information for each type of analyser and accessories covered in the bid.

1.2.3 All items, as offered, shall be field proven and should have completed operations individually for a period of minimum 6 months on the bid due date in similar application with the process conditions similar to those as specified in the purchaser's data sheets. Items with prototype design or items not meeting provenness criteria specified above shall not be offered.

1.2.4 Whenever specified, vendor must furnish certified values of failure rates, probability of failure on demand and test interval for the safety integrity level analysis.

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1.2.5 All documentation submitted by the vendor including their quotation, catalogues, drawings, installation, operation and maintenance manuals, etc shall be in English language only.

1.2.6 Vendor shall also quote for the following: -

a) Complete calibration kit consisting of calibration gas cylinders with material of Construction SS or Al (for carrier (continuous) gas cylinders, CS is also acceptable), pressure regulators, gauges, cylinder gas piping manifolds and driers, (as required) etc. as a minimum, for each analyser. In case of dual range analyser, separate calibration standards shall be provided for each range. For the purpose of calculating requirement of zero and span calibration samples/gases, consider calibration time of 30 minutes every week for each analyser for a period of six (6) months of continuous operation.

b) Complete reference gas kit consisting of Reference gas cylinders, pressure regulators, gauges, cylinder gas piping manifold and drier etc as a minimum separately for each analyser as applicable. The reference gas cylinders shall be supplied for a period of six (6) months of continuous operation.

c) Consumable spares for the duration of six (6) months with list of items as per vendor recommendations for each analyser system, unless otherwise specified in purchaser's specification.

d) Start up and commissioning spare parts for each analyser/analyser system as per vendor's recommendations. However this list of spare parts must include 5% or minimum one no. of each type of following spare parts:

- Solenoid valve
- Pressure regulator
- Filters
- Temperature controller
- IR/UV Source (lamp)
- Peristaltic pump
- Set of fuses
- Set of o-rings
- Tubing and tube fittings (sizes smaller than 6 mm or ¼").

Additional spare parts, if required, during start-up and commissioning, even though not listed in the list of start-up and commissioning spares, shall be supplied by the vendor without any implication.

e) Any special instrument or tool needed for testing, calibration and maintenance of the analyser such as spanner set (for tubes smaller than 6 mm or ¼"), non-magnetic tools, bubble variable area flowmeter etc.

f) Training at vendor works and at site as specified in purchaser's specifications.

g) Two years operational and maintenance spares for each analyser and its accessories as per vendor recommendations, which shall include spare parts like electronic modules, temperature controller, power supply module, flow meter, solenoid valve, pressure regulator, local indicator, tubes, fan assembly, sample cell, detector assembly, UV/IR source/lamps, set of o-rings, set of fuses etc.

1.3 Drawing and Data

1.3.1 Detailed drawing, data, catalogues and manuals required from the vendor are indicated by the purchaser in the vendor data requirement sheets attached with the requisition.

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1.3.2 Final documentation consisting of design data, installation, operation and maintenance manual, calibration procedures etc., submitted by the vendor after placement of purchase order shall include the following, as a minimum:

a) Specification sheet for each analyser and its accessories.

b) Certified drawings for each analyser and its accessories, tag number wise, which shall provide the following information:

i) Overall dimensions in millimetres.

ii) Sampling system details identifying each component with make and model number, process connection, utility connection, calibration sample/gas connection, heat tracing requirements, sample vent and fast loop details etc. The flow, pressure and temperature at interface and other appropriate location must be shown in the sampling system drawing.

iii) Detailed interconnection drawing of each analyser identifying each component with terminal number, cable type, cable size and cable entry details. The interface details shall be clearly identified in the drawing.

iv) Grounding details.

v) Power supply distribution details.

c) Programming/configuration data for each analyser, as applicable.

d) Serial interface specification including its configurational data (addresses) for host communication.

e) Power consumptions and utility requirements.

f) Calibration curves and calibration data for each analyser.

g) Zero and span calibration gas specification including composition, shelf life time and accuracy.

h) Copy of type test certificates and the test certificates of all the tests indicated in clause 4.0 of this specification.

1.4 Definitions

1.4.1 The following definitions shall apply for analysers and their accessories:

a) Transportation time

Transportation time is the time interval between a step change in the process fluid composition in the process line and the initial analyser response (excluding analyser response time).

b) Response Time

The time interval between the initial response of the analyser and the time required for the analyser output to reach a value of 90% of the final output value for a step change in sample quality.

c) Time Constant

The analyser response to reach a value of 63% of the final output value for a step change in sample quality is called the analyser time constant.

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d) Repeatability

Repeatability of a measurement is the band of values within which an analyser repeats its measurement when the same sample is applied to it. The short termed repeatability is generally determined by multiple readings of a sample during calibration and is usually true random error over short period of time if external influences like pressure and temperature etc remain constant.

It is also defined as the difference between two successive analyser results that would be exceeded in the long run in only one (1) case in twenty (20) when a single analyser system is operated on a flowing sample of uniform quality.

e) Sensitivity

The sensitivity of an analyser is a measure of an analyser's ability to detect a least change in concentration of a measured component that is not masked by the background noise.

f) Accuracy

Accuracy of a measurement is the measure of how close the measured value is to the true value of the sample. For all type of analysers, accuracy is primarily a function of the accuracy of the standards used for calibration.

g) Analyser Rack

An open analyser mounting structure with/without canopy used for mounting analysers, sample handling system and their accessories individually or together in combination.

h) Analyser Cabinet

Small housing in which analysers are installed individually or grouped together. Maintenance is performed from outside the cabinet with door (s) open.

2.0 DESIGN AND CONSTRUCTION

2.1 Analyser Requirements

2.1.1 The type of analyser and its measuring principle is specified in the purchaser's data sheet. Accessories and equipments as required to make online analysis complete are also specified in the data sheet. In general, the scope shall include the following:

a) Sample probe and sampling system (primary or secondary), as applicable.

b) Analyser complete with all hardware and software consisting of detector, transmitter and associated equipments.

c) Fast loop and Sample return system, as applicable

d) Calibration and maintenance equipment.

e) Gas cylinders for zero and span calibration.

Unless otherwise specified the scope shall also include supply of all interconnecting tubing, piping, fittings, heat tracing equipment etc., excluding sample return piping from analyser battery limit to sample return header.

In-situ analysers when specified may not include items 2.1.1(a) and (c)

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2.1.2 Analysers and its related equipments directly connected to process line and In-situ analysers shall be capable of withstanding line pressure and temperature conditions specified in the purchaser's data sheet.

2.1.3 The analyser design and design of sample handling system shall be such that components or any sub-assembly that requires removal shall be possible without any need to disassemble any other component. Such components shall include items like stream selector valves, filters, pressure regulators, flow-indicator, detector, electronic modules etc.

2.1.4 Analyser shall be microprocessor based with state-of-the-art technology and shall be capable of being configured from analyser front panel locally using built-in keyboard. When specified, it shall also be possible to configure the analyser from remote through a separate terminal.

2.1.5 The configuration related data of the analyser including set range shall be stored in a non-volatile memory such that this data remains unaffected by power fluctuations or power off condition. In case vendor's standard product stores configuration data in battery backed RAM, analyser shall have facility to provide battery drain alarm as diagnostic maintenance message.

2.1.6 The span of the analyser shall be field adjustable from the analyser front without opening the analyser enclosure. In case, separate device is required to make such a change, the same shall be included, by vendor in their scope of supply.

2.1.7 Analyser shall run diagnostic subroutines on continuous basis and shall be able to provide diagnostic alarms related to analyser optics, detector and electronics, as and when any failure/malfunction is detected.

2.1.8 Analyser shall have an integral output meter with digital readout in engineering units.

2.1.9 All interconnecting wiring shall be colour coded/numbered and terminal blocks be clearly identified.

2.1.10 The analyser shall be capable of providing the following outputs:

a) Isolated 4-20 mA DC current output for each analysed component. Smart or field bus output shall be provided when specifically indicated in the purchaser's data sheet.

b) RS 485 / TCP/IP serial output with MODBUS (RTU) protocol, whenever serial output is specifically indicated in the purchaser's data sheet. The serial output signal shall contain analyser data of component of interest and diagnostic alarms, as a minimum.

c) SPDT contact outputs for various following diagnostic alarms, whenever specified, shall be provided:

i) High or low set point alarm as measurement

ii) Analyser failure

iii) Low sample flow

iv) Temperature control failure

v) Purge failure

Any other alarm contact, either specifically indicated in purchaser's data sheet or available as standard with the analyser, shall also be provided.

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Unless specified otherwise, all contacts shall be normally closed type (contact open in alarm) and shall be rated for 24V DC, 2 Amperes.

Whenever serial interface/ HART option is specified in the purchaser data sheet, the above alarms shall be made available through serial/ HART output as a minimum.

2.1.11 The design of electronic components of analyser system shall be in compliance with the electromagnetic compatibility requirements as per IEC 61000-4 or equivalent EN standard and shall be immune to RFI and EMI radiation.

2.1.12 **Material of Construction**

2.1.12.1 The material of construction of all components wetted by the sample shall be SS316, as a minimum. Vendor must ensure the compatibility of material of each component with the process fluid.

2.1.12.2 For applications where SS cannot be used due to process stream & conditions, other materials such as Monel, Hastelloy or Incoloy can be considered. For materials, other than specified in this clause, if used, must have provenness and approval of the principal/ OEM (Original Equipment Manufacturer) as well as from Purchaser.

2.1.12.3 Material of all soft parts like diaphragms and o-rings shall be of PTFE. Other vendor standard materials can also be acceptable provided these are compatible with the specified process condition.

2.1.12.4 The material of construction of all non-wetted parts shall be as per manufacturer's standard. However non-metallic materials for casings, enclosures and instrument covers shall be avoided.

2.1.13 **Power Supply**

2.1.13.1 Unless indicated otherwise, the analyser including the sample handling system shall operate at 110V / 240 AC, 50Hz UPS power supply.

2.1.13.2 The analyser performance shall be within the specified limits when the supply voltage varies by ± 10% of specified value and supply frequency varies by ±3 Hz of specified value.

2.1.13.3 Electrical tracing when specified, shall operate at 240V, 50 Hz Non-UPS supply. 240V, 50Hz Non-UPS power supply shall also be used for analyser cabinet/panel lighting and air conditioning unit, when specified.

The maintenance temperature (i.e. minimum temperature that is required to be maintained in the line to avoid congeal or condensation inside the tube/line) shall be as follows:

a) The maintenance temperature shall be 10°C higher than the highest expected pour point for congealing service or the operating temperature, whichever is minimum.

b) The maintenance temperature shall be minimum 5°C higher than the highest expected condensation temperature for the condensing service or the operating temperature, whichever is minimum.

2.1.14 **End Connection**

2.1.14.1 Unless otherwise mentioned, end connection details shall be as below:

a) Threaded end connections shall be to NPT as per ASME B 1.20.1.

b) Flanged end connections shall be as per ASME B 16.5.

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c) Grooves of ring type joint flanges shall be octagonal as per ASME B16.20.

d) Flanged face finish shall be as per ANSI B 16.5. The face finish shall be as follows:

125 AARH : 125 to 250 microinch AARH

63 AARH : 32 to 63 microinch AARH

2.1.14.2 Gaskets, bolts and nuts shall be suitable for the service conditions indicated.

2.1.14.3 End connection of sizes 6 mm or below shall be suitably protected against damage.

2.1.14.4 All end connections shall be clearly identified by attaching labels or stainless steel plate of suitable size.

2.1.15 **Enclosure Type**

2.1.15.1 Analyser enclosures and related accessories shall be suitable for the electrical area classification indicated in purchaser's data sheets. The enclosures shall comply to the following standards:

Weatherproof housing	IP-65 to IS/IEC-60529
Intrinsic Safe	IS/IEC-60079
Flameproof housing	Flameproof/Ex (d) as per IS/IEC-60079
Purged Enclosure	NFPA 496

Flameproof and purged equipment shall also be made weatherproof. Vendor shall offer the Analyser purged enclosures only when other types of protection are not available.

2.1.15.2 Analyser where air/nitrogen purge is provided, purge shall be as per NFPA 496. For Panels located in IEC Zone 2, hazardous area Type Z purging shall be used with a purge fail alarm in control room. In case, Panel is located in IEC Zone 1, the power shall be cut-off on pressurization failure with a purge fail alarm in control room as per Type X purge requirements of NFPA 496.

Certification for Purge controller to be provided for Type X or Type Z as per applicable area classification.

Additionally, Local Purge Failure Alarm indication shall also be provided as per NFPA 496.

2.1.15.3 Separate cable entries shall be available in the analyser/enclosure for power and signal cable. Unless otherwise specified, following shall apply:

a) Cable entry and terminal size for power cable shall be informed during detail engineering. Explosion proof 3way junction box with cable glands shall be supplied, if required.

b) Cable entry for Serial cable/signal cables (Signal output) shall be ½" NPT (F).

c) Cable entry for multi-pair signal cables (Multiple outputs) shall be 1½" NPT (F).

2.1.15.4 All enclosure entries including sample, utilities, cables etc. shall be clearly identified by attaching label or stainless steel plate of suitable size.

2.1.16 **Analyser rack and cabinet**

2.1.16.1 The analyser shall be supplied in pre-assembled, pre-tubed and pre-wired condition complete with sample handling system. The primary sample-conditioning unit i.e. conditioning at sample tap-off point, shall be supplied separately.

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2.1.16.2 When open rack mounted installation is specified in purchaser's data sheet, the analyser and sample handling system shall be supplied installed in an open rack with canopy to protect the analyser from direct sunlight and rain. The open rack shall be fabricated using channels/pipes of suitable size. The material of construction shall be stainless steel. The canopy shall also be fabricated out of SS plate of 1.2 mm thick. The canopy shall have overhang of 500 mm in all the direction.

2.1.16.3 Whenever closed cubical mounted installation is specifically indicated in the purchaser's data sheets, analyser and sample handling system shall be supplied pre-installed in freestanding closed analyser cabinet. The analyser cabinet shall be suitable for outdoor installation and shall be provided with a key lock. Cabinet shall also be provided with pre-fabricated SS canopy. Canopy plate shall be 1.2mm thick.

2.1.16.4 Cabinet shall be fabricated out of 2.0mm SS sheet reinforced with angles of suitable sizes. Fittings and hinges shall be of stainless steel. Anchor bolts required for installation of cabinet shall also be supplied by vendor.

Cabinet shall have suitable arrangements for Internal Lighting, Utility sockets, Ventilation, earthing , lifting lugs , nameplate etc.

2.1.16.5 A power isolation switch with suitable circuit breaker or fuse shall be provided for the incoming power supply.

2.1.16.6 All items including analyser installed within the cabinet shall be suitable for the maximum possible temperature likely to be attained within the cabinet (i.e. at maximum ambient temperature with all items fully powered-on within the cabinet) and area classification specified in the purchaser's data sheet.

2.1.16.7 Heating/cooling of analyser cabinet shall be provided either when purchaser's data sheet specifies the requirement of heating and/or cooling or recommended by the analyser manufacturer to meet following requirements:

i) The temperature induced measurement error exceeds ± 1% of full scale in the worst temperature conditions.

ii) The maximum allowable ambient temperature condition of any component within the cabinet exceeds its limits.

2.1.16.8 Whenever cooling is specified or found necessary, Sub-systems or system components which are installed outdoor shall be suitable to continuously operate at ambient temperature and humidity specified under ambient conditions. The heat generation effect of current carrying for the electronic modules shall also be considered. For this purpose the system shall be rated for minimum 5 degC more than the maximum ambient temperature specified.

In case the system is not suitable for the above conditions, Cabinet mounted air conditioner in 1 working + 1 standby configuration, certified for the specified area classification shall be provided.

2.1.16.9 The maximum height of rack/cabinet shall be limited to 2100 mm. Cabinet shall be suitable for side and bottom cable entry.

2.1.16.10 Power supply cable entry and terminal size shall be as defined during detail engineering by purchaser.

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2.2 Sample Handling System

2.2.1 The sample handling system shall consist of primary sample conditioning near sample take off point, sample transportation line, secondary sample conditioning near the analyser, sample return, sample/analyser vent and sample drain/recovering system, as applicable.

The primary sample-conditioning unit shall be a fabricated assembly and shall be mounted on a stainless steel plate suitable for surface mounting.

Secondary sample conditioning shall also be a fabricated assembly and shall be either mounted on a stainless steel plate or within an enclosed cabinet/box with a viewing window. In case the temperature is required to be maintained at primary and secondary sample conditioning, both these conditioning units shall be installed in the heated box/cabinet.

2.2.2 Process Stream sampling shall be continuous and vendor shall design the sample fast loop (bypass loop) as part of sampling system. Design shall ensure that the sample drawn is true representative of the process stream to be analysed.

2.2.3 In general, sampling systems shall be designed and constructed in accordance with API-RP-555. The design of sample handling system shall consider the following factors, as a minimum:

a) The pressure-temperature conditions required for the analyser.

b) Interfering components in the process sample.

c) Normal and abnormal sample compositions.

d) Sample return pressure-temperature conditions.

e) Fouling sample conditions e.g. polymer formation or presence of solids etc.

f) Transportation time requirements.

g) Utilities available and their process conditions.

2.2.4 Sampling system shall include all elements as necessitated by the process conditions indicated in the purchaser's data sheets, to make the sample suitable for the analysis. This shall include but not limited to filters (coarse and fine), pressure regulators, relief valves, flow indicators, flow controllers, temperature indicators, moisture separators, scrubbers, heaters, coolers, dryers, sample pumps, aspirators etc.

Each sampling system element shall be capable of being removed without disassembling the entire system.

2.2.5 Sample probe shall be provided by the vendor to obtain representative sample from the line. The sample probe shall be inserted in the pipe through a ball valve, which shall be part of vendor's scope of supply. Minimum Body wall thickness for ball valves shall not be less than specified ASME B 16.34. The probe design shall ensure the following:

a) On-line removal and insertion of the probe with non-fly-off design. Whenever specifically indicated in the purchaser data sheet, the on-line probe removal facility shall also include depressurising / pressure relieving mechanism.

b) Unless otherwise specified, end connection for installation in the line shall be 1½" flanged with type and rating as specified in purchaser's data sheet. The line isolation valve shall also be of the same size and rating as probe end connection.

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c) The probe diameter shall be such that it can be easily inserted or removed through the line isolation valve when in fully open condition.

d) The length of the probe shall be selected considering its insertion of 30% to 50% of the pipe. For the purpose of calculating probe length, nozzle length shall be considered as 200 mm.

e) Sample Probe requirement & type shall be as per following philosophy.

Line Size	Normal Operating pressure	Sample Phase	Requirement of Probe	Type of Probe
≥ 3 inch	≥10 kg/cm2(g)	Liquid or Vapor	Yes	Retractable type probe having non- fly off design with hydraulic or other proven depressurisation mechanism
≥ 3 inch	<10 kg/cm2(g).	Liquid or Vapor	Yes	Manual Retractable type probe with non-fly off design.
Process connections from Equipments like vessels / Reactors / Columns		Liquid or Vapor	Yes	Sample probe shall be fabricated from SS316L tube with isolation valve without any retracting mechanism.

f) Sample probe shall be self draining type.

2.2.6 Sampling system shall include a sample block valve on all process sample line.

The block valve shall be provided meeting the following requirements:

a) The block valve shall be located immediately after the sample probe.

b) Where purchaser's data sheet does not indicate the requirement of sample probe, the block valve shall be provided in the sample line as a part of primary sample conditioning unit.

c) The size of the sample block valve shall be as per the sample line size while the rating shall be as specified in the purchaser's data sheet.

d) The design pressure of components and tubing shall be in accordance with ASME B 31.3. Relief Valves shall be installed to protect those components installed in a system which have a limited pressure rating. The relief valve shall be connected to a vent or a drainage system, as required.

e) Variable Area Flow Meters, in Sample Conditioning System shall have a metal metering tube. However, in case glass tube is used due to low flow range, same shall be made of toughened borosilicate glass with metal side plates to prevent damage to the metering tube.

2.2.7 The size of the sample tubing shall be decided by the vendor considering:

a) The distance between sample take off and analyser specified in purchaser's data sheet.

b) The specified sample transportation time.

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Where no transportation time is specified in the purchaser's data sheets, vendor shall consider the sample transportation time as 60 seconds.

c) Pressure at the sample take-off point.

2.2.8 Where sample is required to be transported in hot condition, sample shall be drawn using pre-fabricated heated tubes. The heated medium shall be electric power unless otherwise specified in purchaser's data sheet.

Heating shall be controlled such that the sample temperature is maintained typically around +20°C above the sample dew point.

An auto cut-in / auto cut-off and temperature monitoring device shall be supplied duly installed in the sample handling box.

2.2.9 When fast loop is specified or recommended by vendor, vendor shall provide flow meter for sample bypass flow. Sample return line to process shall be provided with isolation valve and check valve. Fast loop pumps shall always be considered in redundant configuration. Vendor shall ensure that return pressure of the sample shall be higher than the pressure of the process return point specified in purchaser's data sheet.

Samples should be returned back to process stream with back pressure and connection size as specified in data sheet. For those applications where other arrangements are required, the samples should be directed to:

i) Flare system: - As the flare system operates at a varying pressure, the maximum operating pressure shall be considered for design of the sampling system.

ii) Recovery system: - HC liquid, which cannot be returned directly to the process, shall be discharged either to the HC recovery system or drained to Closed Blow down as per the philosophy specified in the data sheet. While designing the same, it shall be ensured that the total quantity of liquid disposed is limited to the minimum necessary for adequate sampling. Suitable arrangement with dual pump configuration shall be considered for the recovery system to prevent overflow from the system.

iii) Analyser Vent: - Analyser Vent shall be suitably routed at Safe Height and not left locally at analyser itself. Suitable arrangement with Pipe/ Tube of adequate length as per Purchaser specification along with NRV (Non-Return Valve), Flame Arrester etc. shall be considered for the Analyser safe venting.

2.2.10 Sampling system shall include provision for connecting calibration sample/gases in auto or in manual configuration as specified in purchaser's data sheet.

Whenever auto-calibration requirement is specified in the purchaser's data sheet, it shall be possible to initiate auto calibration cycle at preset time interval defined by user either manually via the analyser keyboard or remotely through an external contact.

The sample handling system shall be designed to include all hardware and/or software to meet this requirement. The analysed component concentration output shall remain at the last good measured value during auto calibration cycle.

2.2.11 In case of multi stream analyser, the sample handling system shall utilize double block and bleed configuration to prevent cross-contamination of samples. All stream selection valves shall have bubble tight shut off. The block valves shall be fail-close type while bleed valve shall be fail-open type.

2.2.12 Filters shall always be provided in dual configuration. It shall be possible to replace the filter without upsetting the operation of the analyser.

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2.2.13 DP transmitter across the filter/ Flow Switch in filter Inlet line shall be provided with indication to control room to warn the operator against choking of filter.

2.2.14 The sampling system shall be designed to consider plugging of sample lines under following conditions, if applicable:

a) Failure of heat tracing

b) Failure of sample pump

c) Failure of instrument air, particularly when sample dilution technique is adopted for sample.

d) Upset or start-up conditions, if excessive solids/solid particles are expected under these operating conditions.

2.2.15 Sample lines and sample return headers used for carrying samples, for more than one analyser, shall be provided with sample pumps in dual configuration. It shall be possible to remove or insert the pump without upsetting the sampling system. In case common sample handling system is asked for in the purchaser data sheet for more than one analyser, isolation for maintenance each analyser shall be provided.

2.2.16 A suitable restriction orifice shall be provided in each sample line to limit the sample flow exceeding thrice the normal flow in the event of tube rupture or opening of tube down the line.

2.2.17 All sample pumps shall be provided with Running/ Status indication in control room. Necessary provision shall be considered to prevent dry run of pumps resulting in pump failure.

2.3 Calibration Gas and Reference Gas Cylinders

2.3.1 Each analyser shall be supplied with following gases with stainless steel or Aluminium cylinders;

a) Reference gas dual cylinder with manifold where required. The reference gas system shall be dedicated, one for each analysers, where required along with automatic switchover to standby cylinder when the first cylinder is exhausted.

b) Certified calibration gases. In case of dual range of measurement, separate calibration gas for each range shall be provided.

2.3.2 Each of the gas cylinders shall be provided with two stage pressure regulator. Manifold shall be provided for reference gas with dual cylinder configuration.

2.3.3 All gas cylinders shall be located near the analyser and shall be supplied with gas cylinder rack with free standing support.

2.3.4 In case the calibration gas deteriorates or depletes with time, vendor may either supply calibration gas cylinders with deferred delivery or supply alternate devices for preparing calibration blend.

2.4 Infra-Red/ Ultra-Violet (IR/UV) Analysers

2.4.1 IR/UV analyser shall preferably be non-dispersive type.

2.4.2 Analyser cell length shall be selected as per specified analyser component range. In case of dual range analysers, the selected cell length shall be suitable for both the ranges.

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2.4.3 The analyser cell material and window material shall be suitable for the specified process condition. Unless otherwise specified or required otherwise by pressure-temperature conditions, the o-ring material shall be PTFE.

2.4.4 The analyser design shall be such that it is insensitive to source fluctuations or degradation or partial cloudiness of cell window.

2.4.5 Special filters shall be offered to minimise the interference of background components, which are of least interest in process stream.

2.4.6 Unless otherwise specified, analyser shall meet the following performance requirements:

Repeatability	:	± 1% of full scale
Zero drift	:	± 1% full scale per 24 hours.
Response Time	:	5 seconds for 90% of final reading.

2.5 Thermal Conductivity Analyser

2.5.1 Thermal conductivity analyser shall be suitable for measuring specific components in a gas mixture.

2.5.2 Analyser shall have precise temperature controller which shall be able to maintain temperature within ± 0.1°C to ensure stable detector operation.

2.5.3 Analyser cell shall have flowing reference gas or sealed in (non-flowing) reference as per manufacturer's standard product.

2.5.4 The analyser sensor cell material shall be suitable for the specified process conditions, unless otherwise specified or required by temperature condition, o-ring material shall be PTFE.

2.5.5 Performance specification

Unless otherwise specified, Analyser shall meet the following performance specifications:

Accuracy	:	± 1% of FSR
Repeatability	:	± 1% of FSR in 24 hours
Response time	:	Maximum 20 seconds for 90% response

2.6 Moisture Analyser/ Dew Point

2.6.1 The requirements of moisture analyser for corrosive as well as non-corrosive applications are specified in this clause. Vendor shall offer the type of analyser as specified in the purchaser's data sheet.

Whenever, the type of analyser is not indicated in the purchaser's data sheet, vendor shall select the type of moisture analyser as per the specified process conditions.

2.6.2 Moisture analyzer for non-corrosive application.

2.6.2.1 The probe shall be in-line mounted (i.e. shall be located at the point of measurement) in general and shall not be damaged by severe shock and line abrasion conditions.

2.6.2.2 The pressure and temperature rating of the probe shall be suitable for the process condition specified in the data sheet.

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2.6.2.3 When mounted remote, the probe shall be installed in a sample cell. The end connections of sample cell shall be flanged with ASME rating as specified in the purchaser's data sheets.

2.6.2.4 Unless otherwise specified or found necessary by vendor, no sample handling system shall be required. However, whenever the sample handling system is specified, the design shall ensure the integrity of sample i.e. moisture contents integrity shall be maintained.

2.6.2.5 The probe shall have Aluminium oxide moisture sensor. Alternate type moisture probe shall also be acceptable, if this meets the performance requirements specified in the purchaser's data sheet.

2.6.2.6 Each probe shall be supplied as pre-calibrated and shall be supplied with its own calibration curve. The calibration shall be valid for a period of minimum six (6) months from the date of supply, as a minimum.

2.6.2.7 Performance specification

The moisture probe shall meet the following requirements as a minimum:

Accuracy:	±2°C within a range of -60°C to 20°C (Dew point)
	± 3°C within a range of –110°C to –60°C (Dew Point)
Repeatability:	± 0.5°C in range of -60°C to 20°C (Dew Point)
	± 1.0°C in range of –110°C to –60°C (Dew Point)
Life span:	One year
Time Constant:	5 seconds for 63% of steady state value.

2.6.3 Moisture analyser for corrosive application.

2.6.3.1 The moisture probe shall be hygroscopically sensitised quartz crystal or equivalent suitable for the specified process samples containing unsaturated hydrocarbon, chlorides, oils etc.

2.6.3.2 Sample shall be conditioned in a sample handling system which shall include filters, condensate trap, dryer, pressure regulator (with or without heating as required) etc., however the design shall ensure that moisture integrity is maintained by the sample handling system.

2.6.3.3 The system shall incorporate a dried reference gas cycle after each sample gas measurement in order to strip volatile contaminants from the detector during reference gas cycle.

2.6.3.4 In order to ensure accuracy and reliability of the moisture analyser, the system shall incorporate a moisture generator, consisting of temperature controlled water reservoir and a permeation tube. The moisture generator shall generate a known moisture sample against which calibration of the analyser can be verified.

2.6.3.5 Performance Specification

The moisture probe shall meet the following performance requirements, as a minimum:

Accuracy:	± 5% of reading
Repeatability:	± 1% of reading
Response time:	max. 60 seconds for 90% of steady state value

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2.6.4 Analyser Monitor/Controller

2.6.4.1 The analyser monitor/controller shall be microprocessor based and shall be programmable type.

2.6.4.2 The monitor/controller shall be remote mounted type with built-in display with keyboard for data display. The cable between analyser and monitor/controller shall be supplied by the vendor.

2.6.4.3 The monitor/controller shall be able to provide sequential display for various parameters and shall be selectable from the display keyboard.

2.6.4.4 A local display unit in the field shall also be provided in the Field Rack for each probe/measurement point. Local display unit shall be intrinsically safe and loop powered type. The required active barrier (with three port isolation) for the local indicator shall be provided by vendor in the analyzer cabinet at control room. Dual power supply required for the barrier shall be provided by vendor. All field mounted instrumentation items shall be weather proof to IP 65.

2.6.5 Moisture Analyzer shall preferably be provided with integral temperature (for liquid service)/ pressure (for gas service) sensor for compensation to enhance accuracy.

2.6.6 Probes are to be shipped adequately encapsulated to maximize shelf life without loss of calibrated accuracy.

2.6.7 Filter assembly shall be with three spare filter elements with filter choke indication sensor. Assembly type and filter mesh (Micron) size shall be per vendor's recommendation.

2.6.8 In addition to the Moisture data, Pressure (for gas service), Temperature (for liquid service) and Flow (all services) indications shall also be provided.

2.6.9 A suitable purging arrangement shall be provided so that, during idling condition i.e. when the moisture probe is not in use during plant shut down or during long isolation condition, the probe can be kept in dry purged atmosphere

2.7 Oxygen Analyser

2.7.1 The type of oxygen analyser shall be offered as specified in the purchaser's data sheet. Where purchaser's data sheet does not specify the type of oxygen analyser, vendor shall select the type meeting all functional and performance requirements indicated in purchaser's data sheets.

2.7.2 The analyser design shall ensure that the analysis is not affected by other sample constituents present in the sample.

2.7.3 **Paramagnetic Type Oxygen Analyser.**

2.7.3.1 Unless otherwise specified, the principle of operation for paramagnetic type of oxygen analyser shall be magnetodynamic type or thermomagnetic type.

2.7.3.2 The analyser shall either have integral or split transducer unit containing the measuring cell and control unit containing the analyser electronics. The control unit facia shall have with LCD/LED display.

2.7.3.3 Whenever the control unit is remote mounted, cable between control unit and measuring cell shall be supplied by vendor.

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2.7.3.4 Whenever paramagnetic type analyser is specified for pressurised or variable pressure application, the offered analyser shall have required pressure compensation to ensure that the measurement is not affected by changes in sample pressure and sample vent pressure.

The analyser design shall be such that the measurement shall not be affected by changes in ambient temperature and sample flow rate.

2.7.3.5 Paramagnetic analyser shall meet the following performance characteristics as a minimum:

Accuracy	:	±1% of full scale.
Repeatability	:	<1% of Span .
Response time	:	Less than 15 seconds for 90% response.

2.7.4 **Electrochemical (Electrolytic) Type Oxygen Analyser.**

2.7.4.1 The electrochemical type of oxygen analyser shall have either aqueous or non-aqueous measuring cell and shall meet the following requirement;

a) The analyser shall be self or auto-calibrating type. The calibration cycle shall be initiated either after a pre-defined time or whenever analyser senses excessive drop/drift in the output.

b) Analyser shall provide a suitable alarm for excessive drift. This information may be available as part of HART/ separate 4-20 mA/ MODBUS output signal.

2.7.4.2 In case, in those analysers where cell need to be replaced after the depletion of electrolyte, the analyser shall, in addition, meet the following requirements;

a) The electro-chemical cell shall be easily replaceable.

b) The analyser shall provide a warning for maintenance i.e. expiration of sensor well in advance (Typically 2 weeks). In addition analyser shall also provide an alarm in case output drops below the minimum reliable calibration level.

c) One spare cell shall be supplied as part of consumable spare.

2.7.4.3 The analyser shall have integral electronics with built in LCD/LED display.

2.7.4.4 Electrochemical analyser shall meet the following performance characteristics as a minimum:

Accuracy	:	±1% of full scale.
Repeatability	:	±1% of full scale.
Response time	:	Less than 15 seconds for 90% response.

2.7.5 **Zirconia Type Oxygen Analyser**

2.7.5.1 The Zirconia type oxygen analyser shall be either in-situ type or extractive type as specified in the purchaser's data sheet.

2.7.5.2 In case of in-situ type of analyser, vendor shall ensure that the analyser as offered is suitable for the pressure-temperature specified in the data sheet and the measurement shall not be effected by changes in sample pressure and flow rate. In case of variable pressure

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application, vendor shall ensure that offered analyser has the provision for pressure compensation and/or pressure balancing arrangement.

2.7.5.3 Zirconia type of oxygen analyser shall be provided with auto-calibration facility to take care of zero-drift of cell.

2.7.5.4 The zirconia analyser shall consist of the following sub-assemblies;

2.7.5.4.1 Sensor Assembly

a) The sensor assembly shall consist of the measuring cell, heater assembly, temperature sensor and connections for reference and calibration gases.

b) The measuring cell shall be a zirconia sensor specific for oxygen measurement.

c) The sensor shall be suitable for operating sample temperature up to 700°C.

2.7.5.4.2 Control Electronics

a) The control electronics shall have capability to execute all required controls, indications, temperature control for normal operation and output signals as specified in purchaser's data sheet.

b) Sensor temperature shall be maintained through temperature controller. Temperature sensor shall preferably be ISA type K thermocouple.

c) Temperature controller shall cut-off power to heater in case of thermocouple burns out.

d) Control electronics shall preferably be remote mounted type. Cable between control electronics and sensor assembly shall be supplied by vendor.

2.7.5.4.3 Reference Gas Control

Reference gas shall be flow and pressure controlled. Flow shall be controlled by variable area flowmeter with needle valve while pressure shall be controlled by self-actuated pressure control valve provided with pressure gauge.

2.7.5.5 Zirconia type oxygen analyzer shall meet the following performance characteristics as a minimum:

Accuracy	:	± 2% of measured value.
Repeatability	:	± 1.0% of full scale.
Response time	:	Less than 10 seconds for 90% response.

2.8 Tunable Diode Laser Spectroscopy (TDLS) Analyser

2.8.1 The Tunable Diode Laser Spectroscopy (TDLS) Analyser shall be cross pipe (in situ) type flanged nozzles unless specified otherwise in the purchaser datasheet. TDLS Analyser shall be a Non-contact type measurement device and shall be suitable for temperatures up to 1500°C.

2.8.2 TDLS Analyser shall have Semi-conductor Laser Diode source in accordance with IEC 60825-1.

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2.8.3 There shall be no routine maintenance required on the TDLS purged optical windows, or field calibration requirement. Validation shall be done with a sealed gas cell of the gas to be measured or with a built-in flow-through cell on the analyser using cylindered standard gases. Validation shall be initiated manually, or on pre-determined schedule as defined by purchaser.

2.8.4 In case of variable pressure/ temperature applications, vendor shall ensure that offered analyser has the provision for pressure/ temperature compensation.

2.8.5 In case of oxygen measurement in heaters stacks & furnaces, external temperature sensing is required and transmitted to TDLS controller for temperature compensation in oxygen measurement.

2.8.6 Isolation valves for mounting the TDLS analyser shall be supplied by vendor.

2.8.7 TDLS analyzer shall meet the following performance characteristics:

Accuracy	:	± 2% of full scale.
Repeatability	:	± 1% of full scale.
Response time	:	less than 10 seconds depending on integration time.

2.9 **Viscosity Analyser**

2.9.1 Viscosity Analyser shall be Vibrating element type.

2.9.2 Sensor shall have built in Temperature detector for optimised performance over wide process temperature range.

2.9.3 The analyser shall have integral electronics with built in LCD/LED display.

2.9.4 It shall be possible to make configuration changes by an inbuilt keypad or through external configurator.

2.9.5 Viscosity analyzer shall meet the following performance characteristics

Repeatability	:	±0.5% of reading.

2.10 **Specific Gravity/ Density/ Molecular Weight Analyser**

2.10.1 Specific Gravity/ Density/ Molecular Weight Analyser Analyser shall be Vibrating cylinder (tube/ spool) or Coriolis type with Field/ Control Room mounted Signal Converter.

2.10.2 Sensor shall have built in Temperature sensor for temperature compensation.

2.10.3 Strainers shall be offered to eliminate higher particle size. Mesh size shall be as per vendor recommendation.

2.10.4 Analyzer shall meet the following performance characteristics

Repeatability	:	±0.02% of reading.

2.11 **Total Sulphur Analyser**

2.11.1 Principle of operation of Total Sulphur Analyser shall be based on Ultra-Violet (UV) spectroscopy.

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