PETRONET LNG LIMITED

ENQUIRY DOCUMENT - MR

(Document No : B862-101-PA-MR-5180-91-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/B862-101-PA-MR-5180/91

BIDDING DOCUMENT
FOR
PUMP-CENT.HOR(SPP)
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 : PUMP-CENT.HOR(SPP)

BIDDING DOCUMENT NO. : JP/B862-101-PA-MR-5180/91

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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 –Indigenous

Date: 06.05.2026

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**	:	**PUMP-CENT.HOR(SPP)**
d)	**EIL RFQ No.**	:	**JP/B862-101-PA-MR-5180/91**
e)	**MR Category**	:	**II**
f)	**Pre-Bid Meeting**	:	NOT APPLICABLE
g)	**Pre-Bid Meeting Details and Venue**	:	NOT APPLICABLE
h)	**Last date of receipt for pre-bid queries**	:	Before 1855 Hrs. on 13.05.2026 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)**	:	**26.05.2026; 1200 HRS**
k)	**UNPRICED BID OPENING** **Opening of Techno-commercial (Unpriced) e-Bids**	:	**28.05.2026; 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. Munish Takhi, Manager (SCM-C&P), Phone No. 0124 289 1346 E-mail ID: munish.takhi@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), 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 A link for the bidding document will also be available on EIL tender website http://tenders.eil.co.in
o)	**Delivery Period/ Completion Period**	:	Within 09 Months on FOT Site basis from the date of PO (Purchase order). **The date of receipt of material at site shall be considered as date of delivery.**

SL NO.	SALIENT FEATURES		DETAILS
			Suppliers are required to dispatch the goods on prepaid door delivery basis through any registered Transporters on FOT Site basis.
p)	**INTEGRITY PACT**		NOT APPLICABLE
q)	**REVERSE AUCTION**		NOT APPLICABLE
r)	**PERIOD OF VALIDITY OF BIDS**		Bid shall remain valid for a period of **THREE 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.** 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 Domestic Competitive Bidding**
2.	**ITB 3.0** **ELIGIBILE BIDDERS** **NEW SUB-CLAUSE 3.7 (g)**	The following clause is **NOT APPLICABLE** for this enquiry. a) 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 **NOT 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

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		by bidder. 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 1346/ 1308 / 1287 e-mail id: munish.takhi@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 Indigenous Bidder, duly filled and complete in all respect. b. Bank Certified Mandate Form as per Form-A duly signed and stamped with the Banker's certification or cancelled cheque. c. Unpriced copy of Price Schedule duly indicating Quoted / Not Quoted (as applicable). d. 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 with India.

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		e. Scanned copy of Addendum / Amendment (if any). f. Valid GST Registration Certificate (applicable for indigenous bidder). g. 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. h. 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. i. 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 **Group wise** 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. 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.

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
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**	**<u>For Supply and Transportation:</u>** 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. 01% against receipt of foundation Bolt. 4. 10% against placement of sub-order for specified major raw material (identified during kick off meeting, if not specified in enquiry) and against submission of ABG of equivalent amount. 5. 19% against receipt and identification of major specified raw materials at Supplier's works and against submission of ABG of equivalent amount. 6. 15% of the total PO value against receipt of main drivers and VFD (as applicable) at vendor's works and against submission of ABG of equivalent amount. 7. 30% against dispatch documents (Copy of LR, IRN and packing list, Invoice) with full taxes duties and transportation charges. 8. 05% against receipt and acceptance of material at site 9. 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. 10. 10% on receipt of all material & acceptance of all materials at site. **Major Raw Material for payment against placement of**

<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>orders:
Castings for casings, impellers, drivers and VFD (as applicable)

Major Raw Material for payment against receipt & identification of raw materials:
Castings for casings, impellers

<u>For supply of Mandatory Spares:</u>
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.

<u>Supervision of Erection, Testing & Commissioning on per diem basis:</u>
• 100% prorate against monthly bills to be submitted by Supplier duly certified by Engineer-in-Charge.</td></tr>
<tr><td>12.</td><td>SCC 2.0
EIL vis-a-vis Supplier Commitments</td><td>
<table>
<tr><td colspan="2">EIL INPUTS</td></tr>
<tr><td>PR</td><td>Within 2 Weeks</td></tr>
<tr><td colspan="2">SUPPLIER COMMITMENTS</td></tr>
<tr><td>Document Control Index</td><td>Within 2 weeks</td></tr>
<tr><td>Progress Schedule (Bar Chart) / material control</td><td>Within 2 weeks</td></tr>
<tr><td>GAD</td><td>Within 6 weeks</td></tr>
<tr><td>Motor Data Sheet</td><td>Within 6 weeks</td></tr>
<tr><td>Utility Summary</td><td>Within 6 weeks</td></tr>
<tr><td>Balance Drawings as per VDR</td><td>Within 12 weeks</td></tr>
</table>
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.
</td></tr>
<tr><td>13.</td><td>SCC 3.0
TRANSPORTATION</td><td>ODC / CRITICAL CONSIGNMENT: NOT APPLICABLE</td></tr>
<tr><td>14.</td><td>SCC 8.2
PRICE VARIATION</td><td>NOT APPLICABLE</td></tr>
<tr><td>15.</td><td>SCC 11.0
MARINE CUM INSURANCE DETAILS</td><td>Marine Cum Erection Insurance Policy is enclosed Annexure-X to SCC.</td></tr>
<tr><td>16.</td><td>SCC 12.1.5 & 12.2.6
LOADING AND PENALTY CRITERIA (LPC) OF MR</td><td>The following clause is 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.</td></tr>
</table>

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
17.	**SCC 16.0** **PART ORDER**	APPLICABLE (GROUPWISE)
18.	**GCC 24.0, SCC17.0** **REPEAT ORDER**	NOT APPLICABLE
19.	**SCC 19.0** TERMS & CONDITIONS FOR SUPERVISION 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	NOT APPLICABLE
21.	**SCC 21.0** TERMS & CONDITIONS FOR ANNUAL MAINTENANCE CONTRACT (AMC)	NOT APPLICABLE.
22.	**SCC 22.0** TERMS & CONDITIONS FOR TRAINING AT SUPPLIER/OEM WORKS	NOT APPLICABLE
23.	**ANNEXURE II TO SCC CLAUSE NO. B-2** **IMPORT DUTIES**	Merit Rate of Customs Duty shall be applicable for this enquiry.
24.	**ANNEXURE-A** **POLICY ON MAKE IN INDIA OF TECHNICAL SECTION OF BIDDING DOCUMENT (MR)**	**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. 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).

BID DATA SHEET		
S.NO.	**CL. NO.**	**CONTENT**
		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.

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:	
3.	a) Specify Despatch Point b) GSTIN no.	a) ……. b) …… In case different despatch points are applicable, specify use same as under:- ….
4.	Rate of GST	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: **Description** | **GST rate in %** Supply & Freight |

BIDDER'S 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></td><td></td><td>
<table>
<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 RFQ) till complete execution of the order.</td><td>Confirmed</td></tr>
<tr><td>7.</td><td>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.</td><td>Confirmed</td></tr>
<tr><td>8.</td><td>Confirm that the offer is valid for the period specified in RFQ/BDS, from the final 'Bid Due Date'.</td><td>Confirmed</td></tr>
</table>

BIDDER'S SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
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
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	Confirmed

BIDDER'S SIGNATURE WITH STAMP/SEAL

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
	bidders, as per provisions of RFQ Document.	
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 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
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

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SL. NO.	DESCRIPTION	BIDDER'S / SUPPLIER'S CONFIRMATION (Strike out response which is not applicable)
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 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 1st Floor, World Trade Centre, Babar Road, Barakhamba Lane, New Delhi-110001, 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

Integrity Pact

Between
Petronet LNG Limited hereinafter referred to as "The Principal",

And

.....

.....hereinafter referred to as "Counterparty"

Preamble

The Principal intends to award, under laid down organizational procedures, Contract/s for .....
The Principal values full compliance with all relevant laws and regulations, and of fairness and transparency in its relations with its all counterparties.

In order to achieve these goals, The Principal has appointed an external independent monitor (*Refer Bid Data Sheet (BDS) for details of independent monitor*) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section I - Commitments of the Principal

1. The Principal commits itself to take all measures necessary to observe the following principles:-

   a) The Principal is committed to have most ethical business dealings with Counterparties.
   b) The Principal values its relationship with all Counterparties and will deal with them in a transparent manner with equity and fairness.
   c) The Principal and/or its Associates (Officers, Directors, Agents, Consultants, Advisors, etc.) will not seek or take any undue benefit directly or indirectly for themselves or for third parties.
   d) The Principal will exclude all of Associates who may be prejudiced or have a Conflict of interest in dealings with Counterparties.
   e) The Principal will honour its commitments and make due payments to Counterparties on timely basis.
   f) The Principal will initiate action and pursue it vigorously whenever corruption or unethical behaviour occurs.

2. No Associate of the Principal, personally or through family members, will in connection with the tender for , or the execution of a contract, demand, take a promise for or accept, for

him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

3. The Principal will, during the tender process treat all Counterparties with equity and fairness. The Principal will in particular, before and during the tender process, provide to all Counterparties the same information and will not provide to any Counterparty confidential/ additional information through which the Counterparty could obtain an advantage in relation to the tender process or the contract execution.
4. If the Principal obtains information on the conduct of any of its Associates, which is a breach of the above or a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a substantive suspicion in this regard, the Principal will inform the Independent Monitor and in addition can initiate disciplinary actions.

Section II - Commitments of the Counterparties

The Counterparty commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

1. The Counterparty will not, directly or through any other person or firm, offer, promise or give to any of the Principal's Associate employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
2. The Counterparty will not enter with other Counterparty into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
3. The Counterparty will not commit any offence under the relevant Anti-corruption Laws of India the Counterparty will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically unless authorized by Petronet.
4. The Counterparty will not instigate third persons to commit offences outlined above or be an accessory to such offences.
5. The Counterparty will not bring any Political, governmental or diplomatic influence to gain undue advantage in its dealings with Petronet.
6. The Counterparty will not make any false or misleading allegation against Petronet or its Associates.

Section III- Disqualification from tender process and exclusion from future contracts

1. If the Counterparty has committed a transgression through a violation of Section II such as

to put his reliability or credibility into question, the Principal is entitled also to exclude the Counterparty from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Counterparty and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

2. The Counterparty accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
3. lf the Counterparty can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

Section IV - Compensation for Damages

1. lf the Principal has disqualified the Counterparty from the tender process prior to the award according to Section - III the Principal is entitled to demand and recover from the Counterparty liquidated damages equivalent Earnest Money Deposit / Bid Security.
2. lf the Principal has terminated the contract according to Section- III, or if the Principal is entitled to terminate the contract according to Section - III (3), the Principal shall be entitled to demand and recover from the counterparty Contractor liquidated damages equivalent to Security Deposit / Performance Bank Guarantee.

Section V - Previous transgression

1. The Counterparty declares that no previous transgressions occurred in the last 3 years with any other Company that could justify his exclusion from the tender process.
2. lf the Counterparty makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section VI – Equal treatment of all Counterparty / Subcontractors

1. The Counterparty undertakes to demand from all subcontractors a commitment in conformity with this lntegrity Pact, and to submit it to the Principal before contract signing.
2. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section VII - Criminal charges against violating Counterparty/ Subcontractors

lf the Principal obtains knowledge of conduct of a Counterparty or Subcontractor, or of an employee or a representative or an associate of a Counterparty or Subcontractor which

constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the lndependent Monitor who may initiate criminal proceedings against the violator.

Section VIII -lndependent Monitor

1. The Principal will appoint competent and credible lndependent Monitor for this Pact, who shall be one of the lndependent Director on the Board of the Principal. The task of the lndependent Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
2. The lndependent Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.
3. The Counterparty will accept that the lndependent Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Counterparty. The Counterparty will also grant the Monitor, upon his request and demonstration of a valid interest, access to his project documentation.
4. The Principal will provide to the lndependent Monitor sufficient information when requested about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
5. As soon as the lndependent Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action.
6. The word 'lndependent Monitor' would include both singular and plural.

Section IX - Pact Duration

This Pact begins when both parties have legally signed it. lt expires for the Contractor 12 months after the last payment under the respective contract, and for all other Counterparties 6 months after the contract has been awarded.

lf any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Chairperson of the Principal.

Section X - Other Provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Petronet LNG Ltd, World Trade Centre, First Floor, Babar Road, Barakhamba Lane, New Delhi.
2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

3. If the Counterparty is a partnership or a consortium; this agreement must be signed by all partners or consortium members.
4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

For the Principal

.....

For the Counterparty

Place .....

Witness 1: .....

Date .....

Witness 2: .....

1.0 Bidders are informed that Reverse Auction will be conducted for finalizing this Tender. Accordingly, the bidders must quote most competitive prices in the first instance itself. The schedule of online Reverse Auction will be conveyed to short listed bidders (as per Clause No. 2 below) after opening of price bid.

2.0 a) In case there are more than three (3) techno-commercially acceptable bids, bidder having highest quote (H1 bidder) will not be allowed to **participate in the Reverse Auction process and his bid will be rejected.**

b) In case of more than one H1 bidders (i.e. H1 tie), latest bid received (bidder whose bid is received at the last) out of all H1 bidders will be rejected as per provisions mentioned above. In case of multi-lot auction, itemwise H1 bidder will be disqualified as per the provision mentioned above.

3.0 Once the schedule of online Reverse Auction is conveyed to the bidders, it will be mandatory for the bidders to participate in online Reverse Auction, failing which, the bidder shall be liable for punitive action including but not limited to rejection of offer, encashment of bid security, wherever applicable, etc. For this purpose, even log-in to the system shall be construed as participation.

Further, if the L1 bidder (based on the lowest evaluated prices out of all the techno-commercial acceptable bidder) does not log-in during online Reverse Auction and Reverse Auction does not lead to any bid lower than the above L1 bid, then the case shall be refloated for that item/ group and the L1 bidder shall be liable for punitive action including but not limited to encashment of bid security, wherever applicable, or any other action as defined in RFQ/Bidding document.

4.0 Training to bidder

Before the online Reverse Auction, EIL shall demonstrate/train bidder's nominated person(s) on the steps involved and explain the methodology of the reverse auction. The training and registration shall be without any cost to the bidder.

On completion of the training, bidders are required to confirm that they have received the complete training before start of online RA process and furnish the process compliance form to EIL. It is the responsibility of the bidder to get acquainted with the online reverse auction methodology so as to avoid any confusion or misunderstanding during the auction.

Submission of the RA compliance form before price opening is a mandatory requirement and not submitting the same shall be considered equivalent to withdrawal of offer. In such an event, the prices of this bidder shall not be opened and online reverse auction shall be conducted without this bidder. Such a bidder shall be liable for punitive action including but not limited to rejection of offer, encashment of bid security, in line with prevailing EIL/PLL policy on such matters.

For participation in the online Reverse Auction, the authorized signatory of the bid shall have a valid class III digital signature certificate in his name issued from an agency certified with certifying authority of India.

Reverse Auction shall be conducted on https://eauction.gov.in/eauction/#/.

5.0 Schedule for Reverse Auction

The online Reverse Auction shall be scheduled for a duration of 30 minutes. If a bidder places a Bid in the last 3 minutes of scheduled closing time of the Auction, the Auction time shall get extended automatically for another 5 minutes from the time of the last Bid placed. Accordingly, as the bidders keep on bidding the prices in the RA, RA will keep on extending for 5 minutes from the bid. However, when there is no Bid in the last 3 minutes, the Auction shall be closed automatically without any extension.

6.0 Grouped items/parts

The term “item” in this document shall also mean “group of items”, wherever formed for basket level bidding, evaluation and ordering.

7.0 Bid Price

The price shall be based on the scope, technical specifications and commercial terms & conditions and other part of Bidding document agreed up to the date of reverse auction.

8.0 Bid Decrement

Bid decrement shall be 0.1% of the Opening Price. The bidder has to lower his bid in multiples of the bid decrement. The Bidder cannot increase its price in Reverse Auction.

9.0 Bidding Currency

Bidding will be conducted in Indian Rupees (INR) for Indian Bidders and equivalent Indian Rupees for foreign bidders. The equivalent Indian Rupees for foreign bidders shall be worked out by foreign bidders using the multiplication factor as given in the Evaluation Criteria.

10.0 Evaluation Criteria

The process of evaluation may result in different multiplication factors for different bidders, due to the loading criteria for techno-commercial deviations (if applicable as per bidding document) and foreign exchange rates etc. These factors will be forwarded to the bidders, at least, 24 hours before the start of auction.

The prices that shall be bid during the auction shall be summation of the evaluated prices (i.e., basic prices multiplied by loading factor) for the respective item/group/part and the same shall be used for ranking of the bidders. The bidder shall work out his basic prices accordingly.

11.0 Auction process

- Each Bidder shall be assigned a Unique User Name & Password. The Bidders are requested to change the Password and edit the information in the Registration Page after the receipt of initial Password. All bids using the Login ID given to the bidder(s) will be deemed to have been submitted by the bidders. During the auction, bidders will be referred by proxy names say B_1, B_2,B_3,etc. and identity will not be disclosed. Accordingly, during the auction, the bidders will be visible with these proxy names to all monitoring the auction.

- The Reverse Auction shall be conducted based on the lowest item wise evaluated price out of all the bidders as the Opening Price. The Bidder shall be able to bid lower than the opening price in multiples of the decrement.

- Only one bidder shall be at a particular position/rank,which means only one L1.

  However, In case of tie during the reverse auction i.e. two Bidders entering the same lowest price, the Bidder who enters the price first in the system will be considered as L-1and the other bidder will be L-2.

- The Bidder shall be able to view the following on his screen along with the necessary fields:

  i. Opening Price.
  ii. Leading Bid in the Auction, i.e., the lowest bid.
  iii. Bid placed by him.
  iv. Minimum Decrement

- The Opening Price and the Bid Decrement shall be displayed on the auction site at the start of the auction. However, the bidders shall be able to view the auction details, generally, 15 to 30 minutes before the start of actual auction.

  At no point of time will any bidder see the names of other bidders, or the prices of bidders other than the lowest bid.

- A bidder can continue to revise his bid till the auction ends. However, the Bidder cannot quote / Bid equal to the Leading / Lowest Bid. He must always quote lower than the Leading / Lowest Bid.

- The evaluation criteria is based on Price alone. The Bidder who quotes the lowest evaluated Price is determined as the lowest bidder.

- However, if Reverse Auction does not lead to any bid, EIL/PLL shall reserve the right to award the job based on the lowest prices quoted in priced bid.

- Apart from the participating bidders, the Reverse Auction shall be visible, while in progress to authorized officials of Purchaser, who are monitoring the process. During the auction, bidders will appear by their proxy names to anybody accessing the portal.

12.0 Bid Validity

The Bid Price submitted in the reverse auction shall be firm and valid for acceptance for a period of 30 days from the date of reverse auction and shall not be subject to any change whatsoever.

13.0 Bids once placed, binding on the Bidder

The bid of the bidder will be taken to be an offer to sell. Bids once submitted by the bidder cannot be cancelled. The bidder is bound to sell the material/ services at the price that they bid. If any bidder backs out and does not accept the order as per the rates quoted in Reverse Auction, the bidder shall be liable for penal action in line with the prevailing EIL/PLL policy, including encashment of bid security, as applicable and

the case shall be refloated.

14.0 Lowest bid of a Bidder

During the process of reverse auction, the bidder may submit several bids. In case the bidder submits such multiple bids, the lowest bid will be considered as the bidder's final offer to sell.

15.0 Submission of final prices by successful bidder

Based on the lowest evaluated price bid in the reverse auction, the successful bidder shall confirm the final evaluated price as per reverse auction, in the format (Annexure-A enclosed herewith) within two days of the completion of Auction to EIL, duly signed and stamped as token of acceptance without any new condition.

Net reduction offered by the bidder during the auction from his quoted prices will be distributed proportionally among, as applicable:

- All the heads considered for evaluation of particular item/group in case of MR
- On all items of item rate tender and amount on which taxes & duties considered
- Break-up of lumpsum prices in case of packaged/lumpsum tender.

EIL/PLL shall place the order after back calculating the final price based on the multiplication factor informed to the bidder as per clause 10 above. Accordingly, bidders need not to submit cost breakup of their final quoted prices in the reverse auction.

16.0 General

- The bidders may quote from their own offices/ place of their choice. Bidder will be responsible for any issues at their end during the entire process of Reverse Auction on E-Tender portal.

- A landline phone of EIL/PLL shall be made available during the reverse auction for any urgent authorised communication with the Bidder. Any unauthorised communication shall not be entertained during reverse auction.

- Any issues faced by the bidders during the auction process must be communicated directly to the nodal office of EIL/PLL.

  Purchaser may extend the bidding time, in such a case, appropriately (generally by half an hour) but not more than once per bidder. However, due to malfunctioning or breakdown in internet connectivity at Auction Website's end, EIL/PLL can suspend or pause the reverse auction or may also decide to cancel Reverse Auction and re-conduct it.

  Message of extension of auction time or suspend or paused shall be communicated to all the bidders through system broadcast message on the RA portal.

- The Bidder, himself or any of his representatives, shall not involve in Price manipulation of any kind directly or indirectly by communicating with other bidder.

- The Bidder shall not divulge either his Bids or any other exclusive details of Purchaser to any other party.

- Bidders agree to non-disclosure of trade information regarding the purchase, identity of EIL/PLL, bid process, bid technology, bid documentation and bid details.

- EIL/PLL can decide to extend, reschedule or cancel any Auction. No bidder can claim any kind of compensation on account of the same.

- EIL/PLL shall not have any liability to Bidders for any interruption or delay in access to the site irrespective of the cause.
- EIL/PLL shall not be responsible for any direct / indirect / consequential losses / damages, on account of systems problems, inability to use the system, loss of electronic information etc.
- EIL/PLL shall be at liberty to cancel the reverse auction process / tender at any time, before ordering, without assigning any reason.
- EIL/PLL reserves the right to conduct price negotiation with overall L1 Bidder based on the outcome of RA.
- EIL/PLL decision on award of Contract shall be final and binding on all the Bidders.

Annexure-A

(Letter to be sent in Bidder's Letter head, duly signed and stamped by authorised signatory Holding Power of Attorney for this work)

Ref. No.: _____ Date:

To

Engineers India Limited
R&D Complex, Sector-16,
Gurugram (India).

Attn. :_____

Bidding Document No. : _____

Name of Work : _____

Project : _____

Sub: FINAL EVALUATED PRICE QUOTED DURING REVERSE AUCTION

Dear Sir,

We confirm that during the Reverse Auction conducted on_____ for the above mentioned work, we have quoted the final evaluated price as under:

For Item Sl. No.:	Final evaluated price (in Figure)	Final evaluated price (in words)
	Rs. _____/-	Rupees_____only
	Rs. _____/-	Rupees_____only

Thanking you,

Signature with Company Seal
Name:
Company / Organisation:
Designation within Company/Organisation:
Address of Company/ Organisation:
Mobile No.:
E mail:
Fax No.:

PROFORMA OF BANK GUARANTEE FOR EMD

(To be submitted on non-judicial stamp paper of appropriate value to be purchased in the name of the issuing Bank)

To,
Petronet LNG Limited
1st Floor, World Trade Centre, Babar Road,
Barakhamba Lane, New Delhi - 110 001

BG No. : _____
Date of Issue : _____
Date of Expiry : _____
(1 Month beyond bid validity)
Date of Claim : _____
Bank Name : _____

Dear Sirs,

1. In consideration of Petronet LNG Limited established under the Company's Act, 1956 having its registered office at 1st Floor, World Trade centre, Babar Road, Barakhamba Lane, New Delhi-110001, India (hereinafter referred to as the "Company" which expression shall unless repugnant to the context or meaning thereof, include all its Successors, Administrators, Executors and permitted Assignees), has floated/issued a Tender/ Bidding Document for _____ (Name of work)[Bidding Document No.:_____] through press notification/ on limited basis, (hereinafter referred to as the "Tender" which expression shall include all the amendments thereto) and M/s _____ (Name of Bidder) having its Head/Registered Office at_____(herein after referred to as the "Bidder" which expression unless repugnant to the context or meaning thereof, shall include all its Successors, Administrators, Executors and permitted Assignees) have submitted a Bid in response to the Tender enquiry and the Bidder having agreed to furnish as a condition precedent for participation in the said Tender an unconditional and irrevocable Bank Guarantee *hereinafter shall be referred to as this "Guarantee"+ of value__ _____[in fig. as per currency indicated in Notice/Letter Inviting Bid] [in words_____ _____] for the due performance of the Bidder's obligations as contained in the Instructions to Bidder *ITB+ and other terms and conditions contained in the Tender document supplied by the Company which amount is liable to be forfeited on the happening of any of the contingencies mentioned in the said Tender document.

2. We_____(Name of Bank) established /registered under the laws of_____(Name of the Country and Act/Laws) having its registered office at_____(hereinafter referred to as the "Bank" which expression shall unless repugnant to the context or meaning thereof include all its successors, administrators, executors and permitted assignees) do hereby guarantee on behalf of the Bidder and undertake to pay immediately on demand signed by the Company's duly authorized officer, to the Company any money or all money up to the extent of the value of this Guarantee at the time but in any case not exceeding (in Fig. with Currency) _____(in words with Currency) in aggregate at any time without any demur, reservation, recourse, contest and/or without any reference to the Bidder. Any such demand made by the Company on the Bank shall be conclusive and binding on the Bank irrespective of any dispute or difference raised by the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other authority.

3. The Bank confirms that this Guarantee has been issued in accordance with the appropriate laws in India [the country of issue].

4. The Bank also agrees that this Guarantee herein contained shall be irrevocable and shall continue to be enforceable in accordance with the Indian Laws and subject to exclusive jurisdiction of Indian Courts as per condition stipulated in Tender Document.

5. The Bank also agrees that the Company at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Bidder and without any reference to the Bidder and notwithstanding any security or other Guarantee that the Company may have in relation to the Bidder's liabilities.

6. The Bank further agrees that this Guarantee herein contained shall remain in full force up to and including one month after the expiry of the Period of Bid validity i.e. upto _____ [01 Month beyond the bid validity] that is taken as the obligations of the Bidder as per Tender document and it shall continue to be enforceable until all the dues of the Company, if any, under or by virtue of this Guarantee have been fully paid and its claim satisfied or discharged.

7. The Bank further agrees that this Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the Bidder during the period this Guarantee is in force but shall be in all respects and for all purposes be binding and operative until payment of all money due to the Company in respect of such liability or liabilities is paid or no claim is lodged by the Company to the Bank within the claim period after the Guarantee expires.

8. The Bank further agrees that this Guarantee shall not be affected by any change in the Bank's Constitution. The Bank also undertakes not to revoke this Guarantee during its currency.

9. The Bank further agrees that to fulfill the Bidder's liability during the bidding process, if requested by the Bidder in writing, the Bank shall issue Amendment to this Guarantee, as and when required, incorporating the extended date of validity and/or other amendment.

10. Notwithstanding anything contained herein above:

    a) The Bank's liability under this Guarantee is limited to -_____(in Fig with currency) _____ (in words with currency) in aggregate;

    b) This Guarantee shall remain in full force up to and including 30 (thirty) days after the expiry of the Period of Bid validity i.e. up to [Date] and any extension(s) thereof on written instruction from the Bidder on whose behalf this Guarantee has been given, in which case it shall remain in full force up to and including 30 (thirty) days after the extended date; and

    c) The Bank shall be released and discharged from all its liabilities and obligations under this Guarantee unless a written claim or demand is issued to the Bank on or before ____ <Date> or within the 30 (thirty) days of the date of expiry of the extended date and the Company's right under this Guarantee will cease.

11. The Bank further agrees that all claims under this Guarantee is payable to the Company as per the bank details mentioned below:

Beneficiary Name	Petronet LNG Limited
Beneficiary Address	First Floor, World Trade Centre, Babar Road, Barakhamba Lane, New Delhi – 110001
Over Draft Account No.	32519890815
Bank Name	State Bank of India
Branch Address	Corporate Accounts Group Branch-II 4th & 5th Floor, Red Fort Capital Parsvanath Towers, Bhal Vir Singh Marg, Gole Market, Near Speed Post Office.

	New Delhi – 110 001
Branch Code	17313
IFSC Code	SBIN0017313

12. The Bank has the power to issue this Guarantee under its Memorandum and Articles of Association and the undersigned is authorized to sign this Guarantee on behalf of the Bank and to bind the Bank thereby.

IN WITNESS whereof, the Bank_____has executed this Guarantee at_____(Place) on_____(Date)

_____
Signed and Sealed by Constituted Attorney

(Signature of a person authorized to sign on behalf of the Bank)

Name:
Designation: Bank
Name:

In presence of witness:

1. Signature _____

   Name & Designation:

2. Signature _____

   Name & Designation:

[Note: The Bank shall issue the confirmation letter of providing this Guarantee on behalf of the Contractor directly to the beneficiary at the above-mentioned address]

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.

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:EMD/ BID SECURITY
:7025:INRxxxxx
:7026:
:7027:<Date of Issue>
:7029:<Expiry date>
:7030:<Place of Claim Lodgement>
:7031:<Issuing Bank IFSC>
:7032:<Issuing Bank Name>
:7033:<Bidder Name>
:7034:PETRONET LNG LIMITED <Address>
:7035:ICIC0000007
:7036:ICICI BANK LIMITED
:7037:PLNG574440489
-}

ANNEXURE-VI TO ITB

Instructions for payment of EMD/Tender Fee through

PLL Online EMD Tender Fee Collection portal

a. Please click or copy the link to the browser.

b. Please note that bidder has to make EMD and Tender Fee payments separately.

c. Please fill all the information for EMD or Tender fee, as the case may be, in the online form.

d. Once bidder submit the information then system will redirect to ICICI bank pay2corp web page where bidder can choose following mode for online payment:
   i. Debit Card
   ii. Net banking (Retail/Corporate)
   iii. Challan mode (EMD only)

e. Outcome of payment mode selected:
   i. **Debit card**: once payment is done, bidder will be redirected to PLL webpage and bidder shall get an e-mail confirmation for payment.
   ii. **Net banking (Retail)**: After authorization of payment on the respective bank webpage, bidder will be redirected to PLL webpage and bidder shall get an e-mail confirmation for payment.
   iii. **Net banking (Corporate):** Bidder has to create the Cheque/ RTGS/ NEFT instruction on the respective bank's webpage, and after that bidder shall be redirected to PLL webpage with Payment awaiting message. Thereafter, transaction needs to be authorised by the approvers on the Corporate Net-banking portal of the respective bank and after authorisation, bidder shall get an e-mail confirmation for payment within next 30 Minutes.
   iv. **Challan mode:** Bidder has to generate the Challan on pay2corp page, and then he will be redirected to PLL webpage with Payment awaiting message. Thereafter, bidder needs to make the payment to the bank account details provided in challan. Bidder to ensure payment authorization within 7 days from the date of challan generation. Once the payment is done, bidder shall get an e-mail confirmation for payment within next 30 Minutes.

f. Bidder/s are advised not to close the browser while making online payment through ICICI Pay2corp.

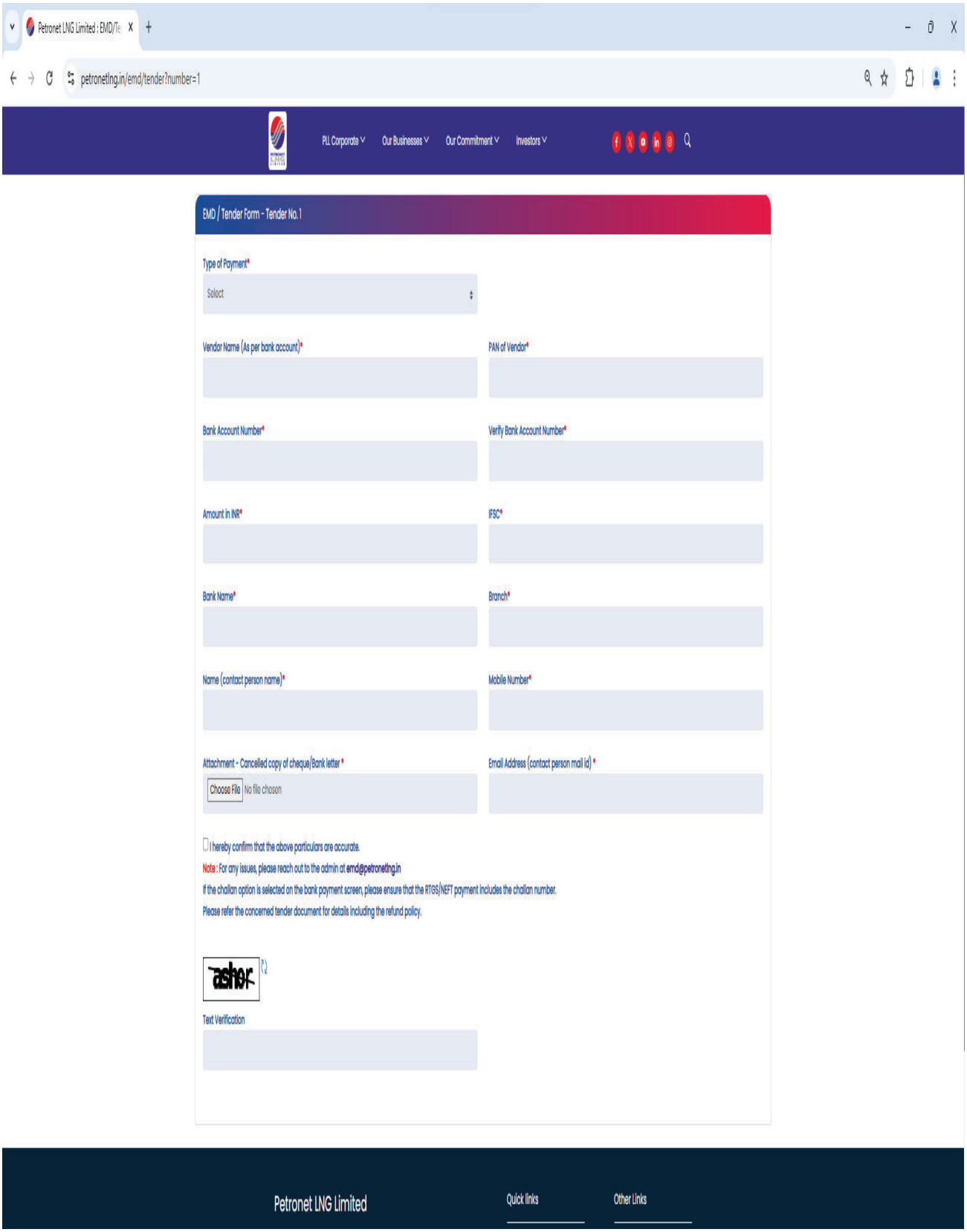
g. Bidder/s should wait for at least 30 minutes for payment confirmation mail after payment authorization in the respective bank.

h. In case, amount is deducted from bidder's bank account and email confirmation has not been received by the bidder, then bidder should attach the proof of payment along with bid.

i. Bidder should ensure the payment amount for EMD/Tender Fee as per Bid Document. In case, bidder has done the payment of incorrect amount then bidder should contact the PLL support team on ***emd@petronetlng.in*****.**

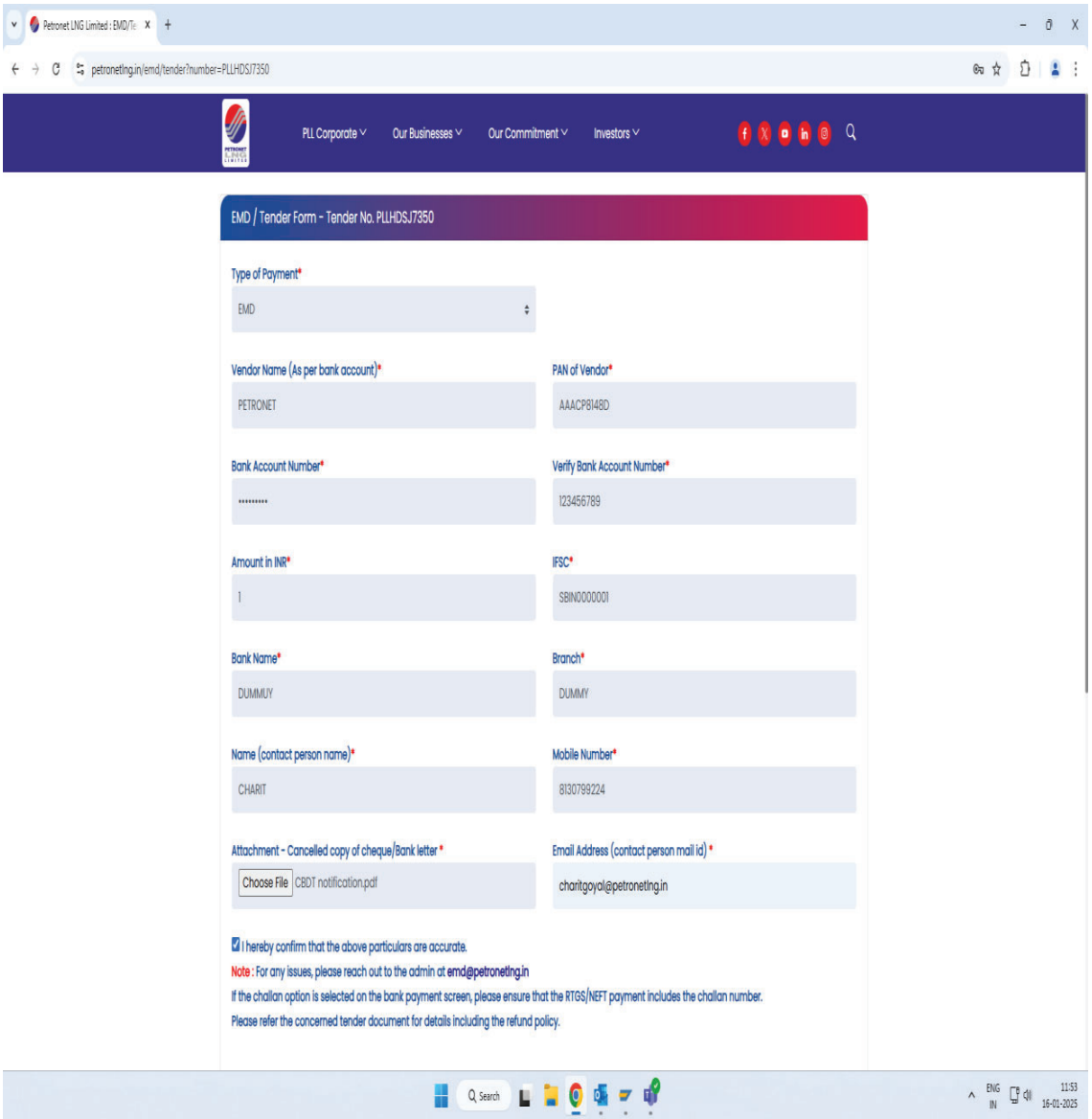
Steps involved (Bidders perspective)

1. Bidder has to open the given link and following web page will be opened in browser.

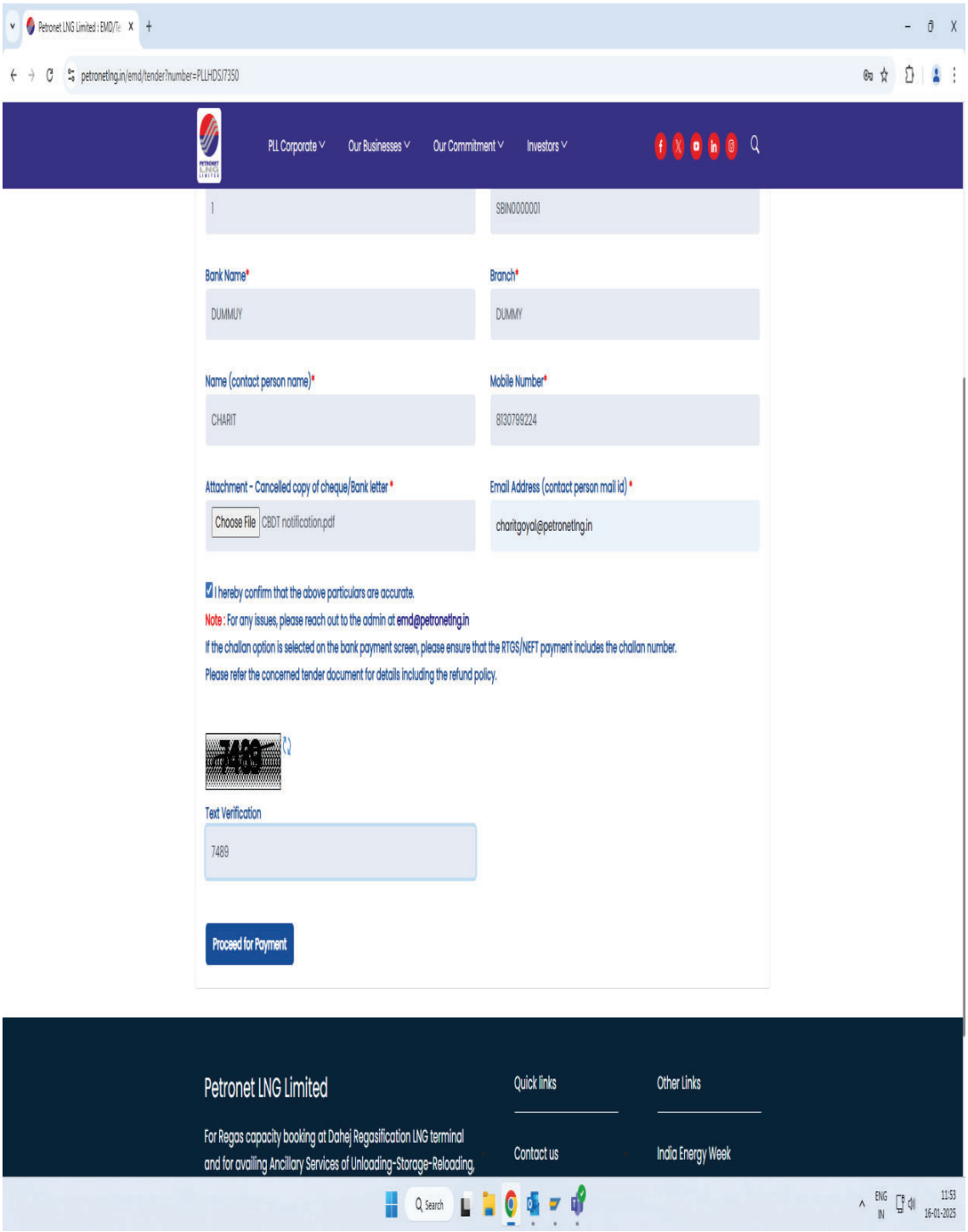


2. Bidder has to fill the following details in respective fields: -

   a. Type of Payment – EMD or Tender Fees
   b. Bidder Name
   c. PAN of Bidder
   d. Bank Account Number
   e. IFSC Code
   f. Amount in INR
   g. Bank Name
   h. Branch
   i. Contact Person Name
   j. Mobile Number
   k. Copy of cancelled Cheque / Bank Letter
   l. Contract Person mail address



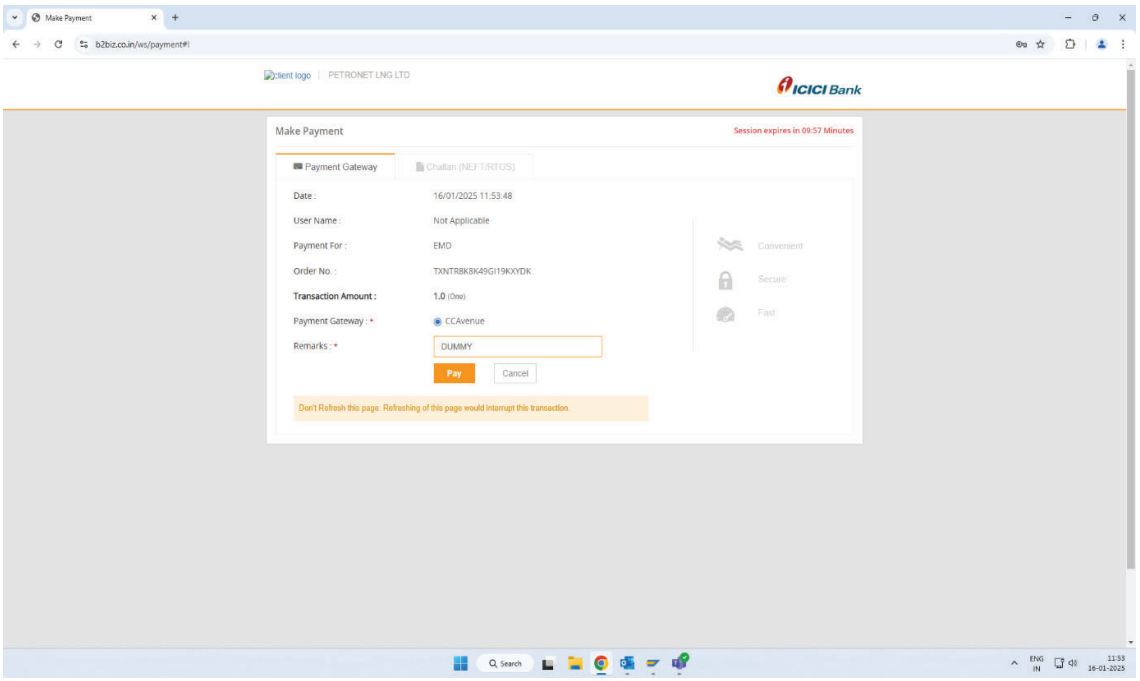
3. Bidder has to certify the filled details, enter captcha and click on Proceed for payment button.



Kindly note that necessary validations are implemented in field box.

In case all details are not filled properly, then Proceed for Payment button will not be shown.

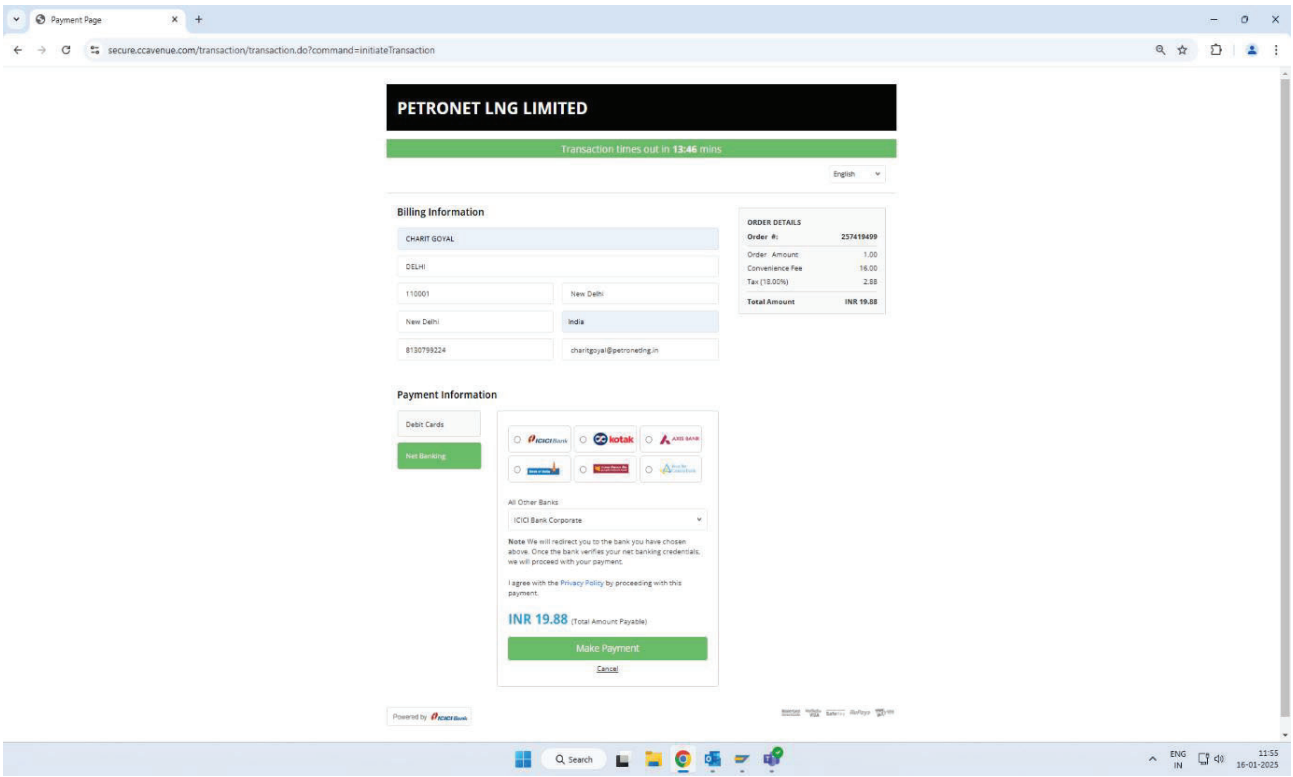
4. Once the Bidder click on Proceed for Payment button, following webpage will open.



5. Bidder has to select the mode of payment out of the following options: -

a. Payment Gateway

If the Bidder selects Payment Gateway option, then he has to provide **Remarks** and click on **Pay** button. Following webpage will open, where Bidder has to fill the billing information and make the payment from **Net-banking** or **Debit Card** and proceed accordingly.



Debit Card

Bidder has to fill the card details and then he will be redirected to the OTP page on Bank's website. Once he enters the OTP, transaction will be completed successfully, and Bidder will be redirected to Petronet EMD page with Payment confirmation message and receipt.

Simultaneously, a system generated mail will be triggered on Bidder's mail id along with Payment Receipt.

Personal Net-banking

Bidder has to click the Net-banking option and select his bank from the list and click on make payment option. Thereafter Bidder will be redirected to the Bank's Net-banking page and login with his credentials and make the payment. Transaction will be completed successfully, and Bidder will be redirected to Petronet EMD page with Payment confirmation message and receipt.

Simultaneously, a system generated mail will be triggered on Bidder's mail id along with Payment Receipt.

Corporate Net-banking

Bidder has to click the Net-banking option and select his bank's corporate portal from the list and click on make payment option. Thereafter Bidder will be redirected to the Bank's Corporate Net-banking page and login with his credentials and create the Cheque/ RTGS/ NEFT instruction. Bidder will be redirected to Petronet EMD page with Payment awaiting message and a system generated mail will be triggered on Bidder's mail id along with pending payment receipt.

Thereafter as per Bidder's SOP in place, transaction need to be authorised by the approvers on the Corporate Net-banking portal. After approval of transaction by the Bidder, status will be updated in the next 30 minutes on Petronet server and a payment success mail will be triggered on Bidder's mail address.

b. Challan Payment

If Bidder select challan payment, a unique challan will be generated, and Bidder will be redirected to Petronet EMD page with Payment awaiting message and a system generated mail will be triggered on Bidder's mail id along with challan.

Thereafter Bidder has to make the NEFT/RTGS payment on the account details provided in the challan generated. After processing of transaction by the Bidder, status will be updated in the next 30 minutes on Petronet server, and a payment success mail will be triggered on Bidder's mail address.

PETRONET LNG LTD	
Date:	09/01/2025 11:19:52
Beneficiary Name:	PETRONET LNG LIMITED PETCHEM ACCOUNT
Beneficiary Account No.:	PTRLNG235610
Beneficiary IFSC:	ICIC0000106
Bank Name:	ICICI Bank
Amount in Figure (in INR):	1.0
Amount in Words (in INR):	One
Reference No.:	TXNCP98XAQBLO985RUK6
Mode of Payment:	NEFT/RTGS
Client Code:	PTRLNG
IP Address &Date:	125.63.96.162 09/01/2025 11:19
Terms &Conditions: Please try to make NEFT/RTGS payment atleast one day prior to tender closing.	
Signature of Depositor	
(For BANK'S USE ONLY)	
Date of Transfer:	
Rupees:	
Debited A/c No.:	
Remittance No.:	
Authorised Signatory	
Branch Stamp	
ICICI Bank	

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
1st Floor, World Trade Centre,
Babar Road,
Barakhamba Lane,
New Delhi - 110 001
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 1st Floor, World Trade Centre, Babar Road, Barakhamba Lane, New Delhi - 110 001 (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
1st Floor, World Trade Centre,
Babar Road,
Barakhamba Lane,
New Delhi - 110 001

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 1st Floor, World Trade Centre, Babar Road, Barakhamba Lane, New Delhi - 110001 (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.

FORMAT FOR CORPORATE GUARANTEE

This Corporate Guarantee made on this ___ day of _____ month _____ year by M/s _____(Parent Company/Group Company/affiliate), a Company organized and existing under the laws of _____ and having its registered office at _____(hereinafter referred to as the "Guarantor" which expression shall unless repugnant to the subject or context deemed to include their successors and assignees) at the request and/or behest of _____, a Company organized and existing under the laws of _____ having its registered office at _____(hereinafter referred to as “Bidder”), in favour of Engineers India Ltd/ _____ (insert name of client), a Public Company organized under the laws of India having its Registered office at _____(hereinafter referred to as “Beneficiary”).

Whereas:

The Beneficiary floated a public tender dated _____no. _____ for _____ (Purpose).The Bidder has submitted its quotation dated _____ and has represented to the Beneficiary that the Bidder is the wholly owned subsidiary/Group Company/affiliate of the Guarantor and that the Bidder has access to and the Guarantor shall make available necessary financial and technical support as required by the Bidder for successful execution of the contract, if awarded to the Bidder, for the Purpose. Accordingly, the Guarantor is ready and willing to give this Corporate Guarantee on the terms and conditions hereinafter contained.

We, the Guarantor are hereby recording the terms and conditions governing our obligations under this Guarantee with the intent of being legally bound by the same and hereby agree, covenant and bind ourselves as follows:-

1. The Guarantor hereby irrevocably and unconditionally guarantees to the Beneficiary, the

performance by the Bidder of its obligations under the terms and conditions of the tender and the contract, upon the contract being awarded to them. The Guarantor shall execute such other deeds and documents as may be desired by the Beneficiary in this regard.

2. The Guarantor unconditionally and irrevocably guarantees to the Beneficiary that it will make available or cause to be made available to the Bidder all financial, technical support and expertise, expert manpower and procurement assistance and project management and other resources required to ensure that the Bidder can carry out its obligations as per the tender terms and conditions and that the Bidder at all times fully and effectively discharge its obligations under the terms and conditions of tender, including by discharging the obligations within the time and cost so stipulated.

3. The Guarantor hereby agrees that if the Bidder shall in any respect commit any breach or fails to fulfill any of the terms of the contract/tender or complete it in all respects or if there is a failure to make any supplies or if any material, equipment or machinery under the contract so supplied is not of the required specifications or does not perform as envisaged under the contract, then the Guarantor undertakes to forthwith perform the same and fulfill all the obligations required under tender/contract terms & conditions (including payment of any liquidated damages) on behalf of the Bidder without any extra cost and time implications. The decision of the Beneficiary with respect to breach/failure by the Bidder shall be final and binding on the Guarantor.

4. The Guarantor further undertakes to indemnify and keep harmless the Beneficiary against all losses, damages, expenses, claims, costs (including legal costs and attorney fees) which may be suffered or incurred or threatened to be suffered or incurred by the Beneficiary due to the failure or breach on the part of the Bidder under the contract and/or the Guarantor under this Guarantee.

5. The Guarantor assures and undertakes that during the term of the contract or of any guarantee for performance as per the contract, the Bidder shall continue to be the wholly owned subsidiary/affiliate/group company of the Guarantor and the Guarantor's liability shall not be affected due to any incapacity or lack of power or legal personality or change in the status of the Bidder or the Guarantor.

6. The Guarantor's liabilities under this Guarantee shall not exceed the maximum limit liability (if any) of the Bidder under the tender/contract terms and conditions.

7. The obligation of the Guarantor shall take effect from the date of this Guarantee and shall be independent of any other security given under the contract and remain in full force until all the obligations of the Bidder under the tender/contract have been fully performed and discharged and/or all sums of money payable to Beneficiary have been fully paid.

8. The liabilities of the Guarantor shall not be discharged, diminished or otherwise affected by:-

a) Any change in the Articles of Association or Bye-Laws or constitution of the Bidder or the Guarantor.

b) Any amendment to the contract (including any extension of time) or any waiver granted to the Bidder.

c) The dissolution, amalgamation, reconstruction or reorganization of the Bidder or the Guarantor.

9. NOTICE:

Any notice, demand, declaration or other communication to be given by the Beneficiary or the Guarantor to the other shall be in writing, in English language and delivered in person or by Air Mail or by Courier Services or by Facsimile or by E-Mail to the address given below and shall be deemed to be validly served after two days from the date thereof:-

For Guarantor

Attention of

Mailing Address

Email Address

Fax No.

For Beneficiary

Attention of

Mailing Address

Email Address

Fax No.

10. No modification, alteration or amendment of this Guarantee or any of its terms or provisions shall be valid or legally binding unless the Beneficiary consents to the same in writing.

11. No failure to take any action with respect to a breach of this Guarantee or a default by any other party shall constitute a waiver of the Beneficiary's right to enforce any provision of this Guarantee or to take action with respect to such breach or default or any subsequent breach or default.

12. The Guarantor confirms that it has all the necessary powers and corporate authority to issue this Guarantee in favour of the Beneficiary and this Guarantee constitutes a valid legal and enforceable document under the law to which it is subject. The undersigned has full power to issue this Guarantee under the power of Attorney /Resolution of Board of Directors Dated---------- granted to him by the Guarantor.

13. GOVERNING LAW AND JURISDICTION: This Guarantee shall be exclusively governed by and construed in accordance with the laws of India without giving effect to the principles of conflict of laws therein. No party shall take a plea that any forum is inconvenient.

14. DISPUTE RESOLUTION: Any dispute arising out of or in relation to this Guarantee shall be resolved by arbitration as per the provision set out in the tender document.

IN WITNESS WHEREOF the Guarantor has duly executed this Guarantee as at the date first above written.

For and on behalf of Guarantor, Witness

_____ Signature :

(Signature) Name :

Corporate Seal / Designation :

Date:

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)
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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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Tender Inviting Authority: GM (SCM), ENGINEERS INDIA LIMITED, GURUGRAM-122001, HARYANA

Name of Work / Enquiry No.: SUPPLY OF PUMP-CENT.HOR(SPP) FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-101-PA-MR-5180/91

Preamble to Price Schedule (BoQ):

i) This BOQ sheet shall be filled by INDIAN BIDDER.
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 till Site.
v) "BASIC SUPPLY PRICE" should be inclusive of all all taxes & duties (except GST) applicable to the bidder but shall exclude Road Transportation charges (which is to be quoted 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 (BoQ1) shall be considered for evaluation/ordering.
vi) Bidders are advised to not tamper with this BoQ format.
vii) Total 5 (FIVE) mandays for EACH PUMP PACKAGE for supervision of erection, testing & commissioning shall be considered for evaluation purpose.Refer Note 5 of Annexure-I to MR Top sheet.
viii) Frieght charges for main supply to be quoted in Column 14.Frieght charges for Mandatory Spares to be quoted in Cloumn 16.
ix) Evaluation & Ordering shall be done on GROUP WISE BASIS. The bidders can quote for any one or multiple group(s) of the tender.For details of each item/group, please refer the MR.
x) 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.
xi) 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.
xii) In case INDIAN bidder imports any material bidder to mandatorily fill and submit BUILT-IN-CIF format enclosed herewith
xiii) Bidder shall quote for mandatory spares as per Document No.B862-101-80-42-SL5180 attached with MR document, for each pump package.Cost of the same shall be added to the total cost of the pump package for the purpose of commercial evaluation.
xiv) Bidder to mandatorily quote the guaranteed values for BKW of pumps in this BoQ.In case bidder does not submit the guaranteed BKW, bid shall be considered as incomplete bid and shall be liable for prima-facia rejection.
xv) The item wise percentage break-up for the purpose of Billing and PRS is considered as follows :
GROUP A3 (FIRE WATER BOOSTER PUMP) : TAG NO. 102-PA-7001A : 50% ; TAG NO. 102-PA-7001B : 50%

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE

(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 AS PER MR Design, engineering, manufacture, procurement of materials and bought out components, assembly at shop, inspection, testing at manufacturer's works, packing & delivery of the following, including supply of all commissioning spares (Note-1) & special tools and tackles (Note-2) & documentation as per the enclosed EIL standard specifications, instructions to vendors, job specification, data sheets etc. and other codes and standards attached or referred.	QTY.	UNIT	Quoted Currency (in INR only)	BASIC SUPPLY PRICE EXCL. GST ON FOT DESPATCH POINT BASIS AS PER MR SL. NO. 01.00 (in currency INR) (To be filled by bidder)	ROAD TRANSPORTATION CHARGES EXCL. GST TILL SITE AS PER MR SL. NO. 03.00 (in INR) (To be filled by bidder)	PRICE FOR MANDATORY SPARE EXCL. GST ON FOT DESPATCH POINT BASIS AS PER MR SL. NO. 04.00 (in INR) (To be filled by bidder)	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 SUPERVISION CHARGES EXCL. GST AS PER MR SL. NO. 08.00 (in INR) (To be filled by bidder)	PER-HOUR OVERTIME CHARGES FOR SUPERVISION EXCL. GST (BEYOND 8 HRS.) ON NORMAL WORKING DAYS (in INR) (To be filled by bidder)	PER-HOUR OVERTIME CHARGES FOR SUPERVISION EXCL. GST ON WEEKLY OFFS/HOLIDAYS (in INR) (To be filled by bidder)	GUARANTEED VALUES FOR BKW OF PUMP (in KW) AS PER SL. NO. 18.00 (To be filled by bidder)
1	2	4	5	12	13	14	15	16	17	19	20	22
1.00	Group A1 as per MR Tag No.101-PA-0006	1	LOT	INR								
2.00	Group A2 as per MR Tag No.101-PA-0007	1	LOT	INR								
3.00	Group A3 as per MR Tag No.102-PA-7001 A/B	1	LOT	INR								

SUPPLY OF PUMP-CENT.HOR(SPP) FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-101-PA-MR-5180/91

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 (INR)	Unit Price on FOT Despatch Point Basis	Road Transportation Charges (in % of Unit Price)	Item Name (Wherever necessary)	Units	Quantity
1		INR	0.00				
2		INR	0.00				
3		INR	0.00				
4		INR	0.00				
5		INR	0.00				
6		INR	0.00				
7		INR	0.00				
8		INR	0.00				
9		INR	0.00				
10		INR	0.00				
11		INR	0.00				
12		INR	0.00				
13		INR	0.00				
14		INR	0.00				
15		INR	0.00				
16		INR	0.00				
17		INR	0.00				
18		INR	0.00				
19		INR	0.00				

DETAILS OF BUILT-IN-CIF VALUE OF IMPORT CONTENT (RAW MATERIALS)	
SUPPLY OF PUMP-CENT.HOR(SPP) FOR PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES PROJECT AT DAHEJ, GUJARAT OF M/s PLL / RFQ No. :JP/B862-101-PA-MR-5180/91	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.

BIDDING DOCUMENT NO. JP/B862-101-PA-MR-5180/91

BIDDING DOCUMENT
FOR
PUMP-CENT.HOR(SPP)
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 :	PUMP-CENT.HOR(SPP)		
Item Code :	04AB	**Destination :**	As per Commercial Documents
Item Category :	II	**Delivery Period :**	As per Commercial Documents

Requisition Number (Always quote this Number given below as reference)

B862	101	PA	MR	5180	B
Job No.	**Unit/ Area**	**Main Cost Centre**	**Doc. Code**	**Sr. No.**	**Rev.**

09/04/2026	80	42
Date	**Divn.**	**Dept.**
	Originator	

Notes :

1. This sheet is a record of all the Revisions of this Requisition.
2. Vendor shall note the item category and shall submit his offer in line with the requirements included in attached 'Instructions to Vendors'.
3. The nature of the Revision is briefly stated in the 'Details' column below, the Requisition in its entirety shall be considered for contractual purposes.

Rev.	Date	Prepared By	Checked By	Approved By	Details
A	19/02/2026	Sohan Lal Meena	Jatinder Singh Duggal	Tarun Kumar	ISSUED FOR BIDS
B	09/04/2026	Sohan Lal Meena	Jatinder Singh Duggal	Tarun Kumar	ISSUED FOR BIDS

This is a system generated approved document and does not require signature.

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Sr. No.		Tag No./Item Code/ [ID.No.]	Description	Quantity	Delivery Location
01.00			Design, engineering, manufacture, procurement of materials and bought out components, assembly at shop, inspection, testing at manufacturer's works, packing & delivery of the following, including supply of all commissioning spares (Note-1) & special tools and tackles (Note-2) & documentation as per the enclosed EIL standard specifications, instructions to vendors, job specification, data sheets etc. and other codes and standards attached or referred.		
▶ **01.001**	A1	**101-PA-0006**	**METHANOL UNLOADING PUMP**	**1 Nos**	
▶ **01.002**	A2	**101-PA-0007**	**METHANOL PUMP**	**1 Nos**	
▶ **01.003**	A3	**102-PA-7001A**	**FIRE WATER BOOSTER PUMP**	**1 Nos**	
▶ **01.004**	A3	**102-PA-7001B**	**FIRE WATER BOOSTER PUMP**	**1 Nos**	
02.00			Deleted		
03.00			Transportation from Vendors work/ shop to site for the following as per the commercial part of the RFQ		
▶ **03.001**	A1	**{03}101-PA-0006**	**For Item Sl. No. 01.001**	**1 No**	
▶ **03.002**	A2	**{03}101-PA-0007**	**For Item Sl. No. 01.002**	**1 No**	
▶ **03.003**	A3	**{03}102-PA-7001A**	**For Item Sl. No. 01.003**	**1 No**	
▶ **03.004**	A3	**{03}102-PA-7001B**	**For Item Sl. No. 01.004**	**1 No**	
04.00			Quotation of Mandatory Spares (Note-3)		
▶ **04.001**	A1	**{04}101-PA-0006**	**For Item Sl. No. 01.001**	**1 Lot**	
▶ **04.002**	A2	**{04}101-PA-0007**	**For Item Sl. No. 01.002**	**1 Lot**	
▶ **04.003**	A3	**{04}102-PA-7001A**	**For Item Sl. No. 01.003**	**1 Lot**	
▶ **04.004**	A3	**{04}102-PA-7001B**	**For Item Sl. No. 01.004**	**1 Lot**	
05.00			Quotation of Two Years Operation and Maintenance Spares (Note-4)		
05.001			**Quotation of Two Years Operation and Maintenance Spares**	**1 Lot**	
06.00			Deleted		
07.00			Deleted		
08.00			Supervision of erection and commissioning of items specified at item 1.00 above (Note-5)		
▶ **08.001**	A1	**{08}101-PA-0006**	**For Item Sl. No. 01.001**	**1 per diem**	

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Sr. No.	Tag No./Item Code/ [ID.No.]	Description	Quantity	Delivery Location
▶ **08.002** A2	**{08}101-PA-0007**	**For Item Sl. No. 01.002**	**1 per diem**	
▶ **08.003** A3	**{08}102-PA-7001A**	**For Item Sl. No. 01.003**	**1 per diem**	
▶ **08.004** A3	**{08}102-PA-7001B**	**For Item Sl. No. 01.004**	**1 per diem**	
09.00		Drawings and documents as per attached Vendor Data requirement for all supplies and services covered above in Sr.Nos.1.00 to Sr.No.8.00	Lot	
10.00		Deleted		
11.00		Deleted		
12.00		Deleted		
13.00		Deleted		
14.00		Deleted		
15.00		Deleted		
16.00		Deleted		
17.00		Deleted		
18.00		Technical Loading as per doc.# B862-101-80-42-LP-5180		
▶ **18.003** A3	**{18}102-PA-7001A**	**For Item Sl. No. 01.003**	**1 Nos**	
▶ **18.004** A3	**{18}102-PA-7001B**	**For Item Sl. No. 01.004**	**1 Nos**	
19.00		Deleted		
20.00		Deleted		
21.00		Deleted		
22.00		Deleted		
23.00		Deleted		
24.00		Deleted		
25.00		Deleted		
31.00		Deleted		
32.00		Deleted		

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- Bidder shall quote prices in EIL Price Schedule except for Sr.No.09.00. Price for documentation is implied to be included in the prices quoted against Sr.No. 01.00 to Sr.No. 32.00

  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.

  Note:
  Bidder to note that one fixed price is to be quoted for grouped items. The groups of items are identified by A1, A2, A3, where A1 indicates one group and so on.
  Grouped items shall not be split ordered.

Other Remarks
General Remarks
1. FOR NOTES , REFER ANNEXURE-1

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ANNEXURE-I

Note-1: Bidder's scope of supply shall include all commissioning spares (mechanical, Electrical and instrumentation) for each pump package as deemed necessary by the vendor/as listed in MR. The same shall be included in the base price of each pump package. Any spares consumed over and above the spares supplied along with each pump package, shall be furnished by the pump vendor at the time of commissioning without any time/cost implication to the purchaser. Any leftover (unused) spares after commissioning, out of those included by vendor in his offer, shall be handed over to the owner.

Note-2: Bidders are required to submit a list of special tools and tackles (as recommended by them / as listed in MR) along with the offer which shall be supplied along with each pump package. Minimum special tools as specified in scope of work/supply of job specifications shall be supplied. If no special tools/tackles are required for normal operation and maintenance of pump package, the same shall be categorically indicated in the bid. The prices of the same shall be included in base price of each pump package. In addition, manufacturer shall include tools which are specific to manufacturer's design of the machine for each pump package.

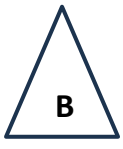
Note-3: Bidder shall quote for mandatory spares as per Document no. B862-101-80-42-SL-5180, for each pump package. Cost of the same shall be added to the total cost of the pump package for the purpose of commercial evaluation.

Note-4: Bidder shall furnish an itemized list with quotation of recommended spare parts/as listed in MR with unit prices for two year normal operation & maintenance of each complete pump package, over & above the mandatory spares (including mechanical, electrical, instrumentation spares). Quotation of these spares shall not be considered for commercial evaluation.

Note-5: The vendor shall provide his services for supervision during erection & commissioning of each pump package. Electrical & Instrumentation sub-vendor's engineers shall also be present along with vendor's erection & commissioning engineers, as required. For each pump package, the supervisory cost of 5 man-days shall be considered for the purpose of commercial comparison. The vendor shall indicate the cost of providing the above services on per diem basis. Per-diem rates, as quoted by the vendor, shall be the basis of payment, however the actual payment for supervision services shall be based on actual man-days consumed at site.

Note-6: The initial fill of lubricants, sealing fluid & other consumables shall not be included in the scope of supply of pump vendor. However, vendor shall furnish list of recommended make oils for bearing lubrication & seal pot buffer liquid (as applicable). Type of oil to be mineral hydrocarbon type. Use of any synthetic oil is not preferred. In case recommended by vendor, same shall be highlighted during pre- bid/ in- bid stage and same shall be included in bidder's scope of supply (part of base price).

Note-7: ONLINE/VIRTUAL MEETINGS: Bidder to note that all meetings during pre-bid stage, technical offer review stage and subsequent detailed engineering stage (in case of an order) may be held in physical / virtual mode. As such, bidder shall ensure availability (at a short notice) of his/his sub-vendor's representative (as the case may be) for all such meetings.



Note-8: Technical loading is applicable only for pump item **102-PA-7001 A/B.** Pump items **101-PA-0006 & 101-PA-0007** are in intermittent service as per process datasheet.
Also refer Doc No.- B862-101-80-42-LP-5180 for technical loading and penalty details.

SPECIAL INSTRUCTIONS TO BIDDERS PUMP-CENTRIFUGAL HORIZONTAL (SPP)

PROJECT	:	**PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**
UNIT NAME / NO.	:	**PROPANE DE-HYDROGENATION UNIT**
CLIENT	:	**M/s PETRONET LNG LIMITED**
CONSULTANT	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev.No	Date	Purpose	Prepared by	Checked by	Approved by
A	01/01/2026	ISSUED WITH MR	SLM /MK	JSD	TK

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1.0 Scope

This document is intended to outline the procedures envisaged for execution of this enquiry including pre-bid & in-bid requirements.

2.0 Special Requirements

2.1 This bid is intended to be without any deviations to enquiry specifications & bid evaluation will be preferred to be carried out "WITHOUT ANY POST-BID CORRESPONDENCE**"**. Bidders must follow the following guidelines to achieve the same. Offers submitted with deviations (other than deviations which are agreed during pre-bid meeting and/or technically infeasible deviations) or incomplete offers may be liable for rejection.

2.2 Pre-Bid stage:

i) The bidders shall be invited for an extensive pre-bid meeting after floating of enquiry. Participation in pre-bid meeting is **PREFFERED** for all the bidders. The Pre-bid meeting shall be attended by competent representative(s) of bidder who is competent enough to discuss and conclude all the technical and commercial issues. **It is in Bidder's interest to participate in pre- bid meeting to have all their doubts clarified so that their bid is inline with enquiry specification requirements.**

ii) Bidder's deviations/clarifications to data sheets/specifications/referred codes and standards, if any shall be discussed / finalized during the pre bid. Hence, bidder shall submit the same during pre-bid stage, before the pre-bid meeting.

iii) Bidders shall submit their clarifications/deviations etc. with respect to RFQ requirements within the cut-off date as specified in the enquiry document, in the format **(Doc no. B862-101-80-42-DF-5180)** after which Owner/Consultant reserves the right not to entertain any clarifications/deviations.

iv) Bidder to note that only technically infeasible deviations shall be discussed during **PRE- BID meeting** provided a suitable justification for the same is furnished. Purchaser's decision on such deviations shall be treated as **FINAL**. Deviations, which can be complied either with extra cost and or with time implications, shall not be permitted. It is in Bidder's interest to ensure that all technical deviations are sorted out in the pre-bid meeting stage only.

v) Conflicts, if any, between various documents attached in the material requisition shall be highlighted by the bidder during pre-bid meeting and purchaser's decision shall be final.

Any conflict brought to purchaser's notice during in-bid & post bid stage shall be subject to purchaser's clarification/ decision during that stage and the same shall be complied to by the bidder without any cost/ time implications.

vi) In case the parameters and/or scope of certain item(s) included in the MR get revised due to revision in process requirements or discussion during pre-bid meeting and/or any other reasons, an amendment/revised MR (clearly identifying the changes) shall be issued.

2.3 In-Bid requirement:

i) For drawings/ documents required with the Bid, refer Vendor Data Requirement (B862-101-80-42-VDR-5180, Electrical & Instrumentation) enclosed with inquiry

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document. Bidder shall necessarily furnish all the documents specified in VDR with the bid. In absence of the same, the offer shall be liable for rejection.

ii) Bidder shall not submit with bid any drawings/ documents which is not specified in the Vendor Data Requirement (VDR). Any drawing/ document, other than those which are required as per VDR, shall not be taken into cognizance & shall be considered as “VOID”. Any information/ deviation furnished by the bidder in these additional document (if furnished with offer) shall not be considered at all and shall not be part of purchase order, if order is placed on that Bidder.

iii) Bidder shall furnish the un-priced EIL price schedule format duly filled in without any markings/ alterations/ comments/ clarifications except for writing ‘Quoted’ in the applicable space provided.

iv) Vendor shall furnish duly filled in, signed & stamped "Technical Details Proforma (doc.# B862-101-80-42-TD-5180)" along with the bid. The bid would be treated as incomplete without the same.

2.4 ONLINE/VIRTUAL MEETINGS: Bidder to note that all meetings during pre-bid stage, technical offer review stage and subsequent detailed engineering stage (in case of an order) may be held in virtual mode only. As such, bidder shall ensure availability (at a short notice) of his/his sub-vendor’s representative (as the case maybe) for all such meetings.

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SCOPE OF SUPPLY/ WORK PUMP-CENTRIFUGAL HORIZONTAL (SPP)

PROJECT	:	**PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**
UNIT/UNIT NO.	:	**PROPANE DE-HYDROGENATION UNIT / 101**
CLIENT	:	**M/s PETRONET LNG LIMITED**
CONSULTANT	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
B	08/04/2026	Revised for bids	NB/ MK	JSD	TK
A	19/02/2026	Issued for Bids	SLM / MK	JSD	TK

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PART – A : SMED (ROTATING)

- Bidder shall furnish all equipment, drivers, auxiliary systems, instruments and controls and safety devices as per the enquiry document. ***Bidder to sign and stamp this scope of supply document and submit along with the bid.***

- Vendor's scope of supply shall include but not be limited to the following **for each Pump package:**

Sr. No.	Description	By Vendor (Yes/No)	Remarks
1.	**PUMP** (Refer Licensor datasheet, equipment data sheets and specs. for full details)		
1.1	Pump Centrifugal Horizontal complete with mechanical seals, Mechanical Seal flushing plan, cooling system etc. as per datasheet, specification.	**Yes**	**As per API 610, 12th Edn.**
1.2	Electric Motor driver (with canopy)	**Yes**	
1.3	Coupling (non-lubricated metallic flexible element) with spacers and non-spark guards	**Yes**	
1.4	Cooling Water Plans including all piping and fittings.	**Yes**	**As applicable**
1.5	Matching companion flanges, gaskets, bolts & nuts etc. at all terminating points requiring purchaser's interface having non-standard sizes/Ratings, including reducer from non-standard size to nearest standard size, as loose supply.	**Yes**	**For non standard sizes/Ratings.**
1.6	All associated auxiliary piping etc., prefabricated and duly mounted on the equipment/base-plate	**Yes**	
1.7	Common base plate/skid for pump, driver, seal system and other auxiliaries as required.	**Yes**	
1.8	External PSV at pump discharge for item 102-PA-7001 A/B	**Yes**	**(Loose supply) Refer pump P&ID attached with MR**
2.	**Electrical**		
	Refer Electrical section Part-B	**Yes**	
3.	**INSTRUMENTATION**		
	Refer Instrumentation section Part-C	**Yes**	
4.	**Spares & Tools/Tackles** Spares for the pump package including SMED (Rotating), Electrical, Instrumentation etc.		
4.1	Quotation of Mandatory spares, as specified in the doc.#. B862-101-80-42-SL-5180	**Yes**	
4.2	Commissioning spares (as listed in MR & as recommended by the equipment manufacturer)	**Yes**	**Shall be included in the base price**
4.3	Special tools and tackles required, if any, for erection, site assembly and maintenance of each equipment of Pump package (as listed in MR & as recommended by the equipment manufacturer)	**Yes**	**Shall be included in the base price**
5.	Inspection & Tests as specified in data sheets and specifications	**Yes**	
6.	**Vendor Data & Drawings**		
6.1	All data & drawings as required per Vendor data requirements, data sheets, specifications and referenced codes and standards.	**Yes**	
7.	**Supervision of Erection & Commissioning**		
7.1	Supervision of Erection & Commissioning of each pump package	**Yes**	**@ per diem rate basis**

B

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Sr. No.	Description	By Vendor (Yes/No)	Remarks
8.	**Miscellaneous**		
8.1	All Foundation / Anchor Bolts	**Yes**	
8.2	The initial fill of lubricants, sealing fluid & other consumables	**No**	**
8.3	Painting, Preparation of Shipment and export quality packaging	**Yes**	
8.4	Participation of Purchaser's personnel during assembly and other important activities.	**Yes**	
8.5	Additional items (including mechanical, electrical and instrumentation & controls) not specified by Purchaser but recommended by vendor for safe, smooth and efficient operation of complete Pump Train (Vendor to include separate list of such items in his proposal along with their unit prices)	**Yes**	

******** *The initial fill of lubricants, sealing fluid & other consumables shall not be included in the scope of supply of pump vendor. However, vendor shall furnish list of recommended make oils for bearing lubrication & seal pot buffer liquid (as applicable). Type of oil to be mineral hydrocarbon type. Use of any synthetic oil is not preferred. In case recommended by vendor, same shall be highlighted during pre- bid/ in- bid stage and same shall be included in bidder's scope of supply (part of base price).*

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PART B: ELECTRICAL

1. GENERAL

1.1 The specification defines the basic requirements of the electrical works and supply in vendor's scope for the **Horizontal Centrifugal Pumps of PDH UNIT** for PDH-PP Project of M/s PLL. This document shall be read in conjunction with Job Specification, EIL standard specifications, data sheets and documents attached with the Material Requisition. In case of any conflict amongst various documents enclosed with MR, the most stringent requirement shall govern and Owner/EIL decision in this regards shall be final.

1.2 The equipment shall conform to this specification, enclosed data sheets and standard specifications.

2. VENDOR'S SCOPE OF SUPPLY

The Electrical scope of supply shall include but not limited to the following:

Description**	Supply by vendor	Supervision of Erection, Testing & Commissioning
All MV Motors	√	√ (See Note-a)
Cable Glands and Cable lugs as required for termination of power & control cables at vendor supplied Equipments.	√	
Commissioning spares for electrical equipment	√	
Mandatory spares for electrical equipment	√	
Two Years Operation & Maintenance spares for Electrical Equipments	√	
Special tools and tackles for Electrical Equipments	√	
All data & drawings as per vendor data requirements, data sheets, specifications and referenced codes and standards.	√	

Battery Limits/Works Excluded:-

The battery limit for interface with Owner's system shall be as follows:-

Description	By vendor	By Owner
Supply, laying & termination of power, control & Space heater cables from purchaser's switchgear located in substation to the Field Equipments / electrical load.		√
Feeders for all electrical loads of the package		√

****Only the major equipments (for each package) have been defined above any other equipment required for the safety, smooth running of the system shall be included in the vendor's scope and same shall be highlighted separately.**

Note:

a. Supervision of Installation, testing and commissioning shall be carried out as required as mentioned elsewhere in this MR.

b. Two years operation and maintenance spares for Electrical Equipments shall be quoted as per MR.

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PART C: INSTRUMENTATION

1.0 SCOPE OF SUPPLY AND WORK

1.1 Vendor's scope of instrumentation supply and work shall include the followings as a minimum:

a) Supply of all instruments as per required seal flushing plans 11, 53B, 61 along with approved pumps P&ID by vendor.

b) Design, Engineering and procurement of instruments.

c) Piping and all other erection material including all fittings, mounting accessories, instruments support (2" yoke type) for erection of instruments (skid mounted & non-skid mounted); under vendor's scope of supply, as per installation standards (EIL installation standards shall be provided during detail engineering).

d) SS304 Cable glands/plug shall be duly installed with the instruments, junction box and local panel as applicable.

e) For skid mounted instruments, supply & installation of instruments as per EIL installation standard and supply, laying & termination of cables (using Anodized Aluminium cable trays) along with interface JBs within prefabricated skid are in vendor's scope. Trays shall be Anodized Aluminium cable trays with 2.5 mm thick.

f) Submission of documents shall be as per VDR.

g) Multi-stage pump (BB5 type, If any) shall be provided with probes/detector for measuring vibration and bearing temperature. The other pump (OH2, BB2) shall have provision for mounting accelerometers (X & Y) on each bearing housing as per API 610. Also, Vibration & temperature transmitters with 4-20 mA output shall be provided along with the vibration & temperature probes.

h) Motor bearing & winding temperature elements shall be provided as defined elsewhere in this requisition. If Temperature elements are applicable, then Temperature transmitter shall also be provided for monitoring of motor bearing & winding temperatures in the DCS.

i) Supply of following cables between vendors supplied instruments/ system.

i. Supply of interconnection cables between vibration & temperature probes & vibration & temperature transmitters mounted in the skid (consider cable distance of 10 m).

ii. Supply of RTD extension cable between motor bearing & winding temperature elements on the terminal box up to the temperature transmitters (consider cable distance of 10 m).

iii. Supply of cables from temperature transmitters up to the Junction box.

iv. Supply of cables from any other field instruments to the vendor supplied junction box/local control panel.

j) PSV at discharge of the fire water booster pump as per P&ID shall be supplied by Vendor.

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1.2 Supply of instrumentation cables other than indicated in the clause 1.1 (i) above and laying of cables between vendors supplied non-skid mounted instruments/ skid mounted interface junction boxes/local control panel and Purchaser's Control System at satellite rack room shall be done by others and not in the vendor's scope.

1.3 For pump seal plan instruments, wireless transmitters shall be used to the extent possible wherever it is available for the type of instruments applicable for pump seal. Wireless vibration/ accelerometer (if vibration probes are applicable, as defined elsewhere in MR) shall be used to the extent possible wherever it is available for the type of instruments. The wireless instruments transmission protocol shall be either wireless HART or ISA 100.11a.

1.4 Bidder shall include supply of commissioning spares, special tools & tackles as applicable, along with the base price of the respective pumps. Vendor shall quote separately for 2-year operation & maintenance spares as per vendor's recommendation.

1.5 Bidder shall generate and submit all instrument datasheets, Cable Schedule, and Instrument Index using Intergraph Smart Plant Instrumentation (SPI) 13.1. Bidder shall provide the editable Instrument Index once the Final approved P&ID is available for generating blank .isf files for the tags in the Instrument Index. Accordingly, vendor shall fill those blank sheet using external editor and provide the filled in .isf files for merging vendor datasheet with Purchaser's database. Vendor shall prepare instrument datasheets using the same only and submit pdf outputs for review/records and after finalization, the final ".isf file" shall be submitted for migrating the data into purchaser's main SPI database.

1.6 Bidder shall provide minimum 10% or 1 (one) no. (whichever is higher) of each type of wireless instrument (including wireless vibration transmitter, if applicable) (based on range, protocol, type & material of construction) shall be provided as mandatory spare for pump seal instruments of each pump (i.e. A/B pump together as one pump). Price for the same shall be quoted separately for the respective pump.

1.7 Bidder shall provide minimum 10% or 1 (one) no. (whichever is higher) of each type of SMART (HART or FF) instrument (based on range, protocol, type & material of construction) shall be provided as mandatory spare for pump seal instruments of each pump (i.e. A/B pump together as one pump). Price for the same shall be quoted separately for the respective pump.

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MANDATORY SPARE LIST
PUMP - CENTRIFUGAL
HORIZONTAL (SPP)

PROJECT	:	**PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**
UNIT	:	**PROPANE DE-HYDROGENATION UNIT**
CLIENT	:	**M/s PETRONET LNG LIMITED**
CONSULTANT	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
B	09.04.2026	Issued with MR	NB/MK	JSD	TK
A	19.02.2026	Issued with MR	SLM / MK	JSD	TK

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SECTION A: SMED (ROTATING)

Mandatory spares shall consist of the Spares as listed below in the table for each grouped item:

Sr. No.	Part Description	Unit	Total Quantity *(Per grouped item i.e. total quantity for working and standby units of a grouped item)*
A)	**PUMP**		
1.	Shaft & impellers	Set	1
2.	Mechanical Seals	Set	1
3.	Bearings	Set	1
4.	Gaskets	Set	2
5.	O-rings	Set	2
6.	400% lube oil filter cartridges (if applicable)	Set	1
B)	**ELECTRICAL**		
1.	REFER SECTION-B		
C)	**INSTRUMENTATION**		
1.	REFER SECTION-C		

Notes:

1. The word 'Set' means the quantity required for full replacement of that part in one machine.
2. The bidder shall quote for all the mandatory spares as defined above & as applicable to the proposed design of the equipment. In case, any spare which is listed in the checklist but not applicable due to specific construction/design of the equipment, the same shall be highlighted as 'Not Applicable' against that spare supported with proper technical explanation.'
3. Spare part shall be identical in all respects to the parts fitted on the main equipment, including dimensions, material of construction, testing and heat treatment.
4. The cost of these Mandatory Spares shall be added to the total cost for commercial evaluation of the offer.
5. The offers, not including the quotation for mandatory spare parts in the commercial section & the un-priced quotation for mandatory spare parts in the technical section shall be considered as incomplete offers and shall be liable for prima-facia rejection. The bidder is advised to furnish the above quotation along with the techno-commercial offer (i.e. both un-priced & priced copies).

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SECTION B ELECTRICAL

The following mandatory spares for electrical equipments shall be included by the bidder:

Sl. No.	Part Description	Quantity Required
1.	**MV induction motors 37 kW & above (one set of spare for each rating & type)**	
1.1.	Bearing set (DE & NDE)	one no of each type
1.2.	Terminal/ bushing	one set each

NOTES:

i) Wherever %age is identified, Bidder shall supply next rounded figure.
ii) The terminology used under 'Part Description' is the commonly used name of the part and may vary from manufacturer to manufacturer.

SECTION C INSTRUMENTATION

1.1 Bidder shall provide minimum 10% or 1 (one) no. (whichever is higher) of each type of wireless instrument (including wireless vibration transmitter, if applicable) (based on range, protocol, type & material of construction) shall be provided as mandatory spare for pump seal instruments of each pump (i.e. A/B pump together as one pump). Price for the same shall be quoted separately for the respective pump.

1.2 Bidder shall provide minimum 10% or 1 (one) no. (whichever is higher) of each type of SMART (HART or FF) instrument (based on range, protocol, type & material of construction) shall be provided as mandatory spare for pump seal instruments of each pump (i.e. A/B pump together as one pump). Price for the same shall be quoted separately for the respective pump.

Also Refer Part-C of Scope & Supply (Document No.- B862-101-80-42-SS-5180) for Mandatory spares of Instrumentation.

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JOB SPECIFICATION FOR PUMP CENTRIFUGAL HORIZONTAL (SPP)

PROJECT : **PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**

UNIT/UNIT NO. : **PROPANE DEHYDROGENATION UNIT (PDH) / 101**

CLIENT : **M/s PETRONET LNG LIMITED**

CONSULTANT : **M/s ENGINEERS INDIA LTD.**

JOB NO. : **B862**

Rev. No.	Date	Purpose	Prepared by	Checked by	Approved by
B	08.04.2026	Issued with MR	NB/ MK	JSD	TK
A	19.02.2026	Issued with MR	SLM/MK	JSD	TK

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1.0 GENERAL

1.1 This specification along with equipment data sheets, specifications, applicable codes & standards attached and referred to, describes the minimum requirements for design, engineering, manufacture, testing, supply and supervision of erection and commissioning of "ELECTRIC MOTOR DRIVEN HORIZONTAL CENTRIFUGAL PUMP PACKAGES (SPECIAL PURPOSE SERVICE)" as described hereunder and in various attachments listed in the "Table of Contents" of this material requisition. The pump packages are required for Propane De-hydrogenation Unit of **PDH-PP Plant with Ethane and Propane Handling Facilities Project of M/s Petronet LNG Limited (PLL) at Dahej.**

1.2 The intent of these requirements is to supplement, highlight and modify the requirements as given in data sheets, specifications as listed under list of attachments and enclosed with the MR and other applicable standards referred to in data sheets and specifications

1.3 In case of any conflict between this Job Specification and other enquiry documents, the following preferential order shall govern:

a. Statutory requirements
b. Process Package (PDS, P&IDs, licensor specifications (if applicable), etc.)
c. Mechanical Datasheets
d. Job Specification
e. Other Datasheets/Drawings attached
f. EIL Standard Specifications
g. Other Specifications
h. International Standards/Codes/recommended practices as applicable

In case of any ambiguity in the above documents, the vendor/ supplier shall ask for clarifications in consolidated form during pre- bid meeting. After which any ambiguity brought out, the stringent of the same shall be applicable and the decision of the EIL/ Client shall be final. Suitable addendum/amendment/revised MR shall be issued prior to the submission of the bids.

1.4 Vendor shall make all possible efforts to comply strictly to the requirements. Deviations, if any, required by vendor shall be separately consolidated under "List of Deviations" (format attached in MR) with specific references to Document no., Page no., Clause no./ Para no., Line no. etc. of the applicable document to which deviation applies, along with adequate reasons for each deviation during pre- bid stage. Further, **vendor shall furnish "Technical Compliance Statement", duly filled, signed/ stamped**, stating that his offer is in total conformity with all the datasheets and document Listed under "Table of Contents" and the referenced codes, standards and recommended practices. No deviation shall be considered after award of the order. Any comment, deletion, correction on the body of the datasheets/ specifications will not be taken cognisance of and all such deviations shall be deemed to have been withdrawn.

1.5 Compliance with this specification shall not relieve the vendor of the responsibility of furnishing equipment and auxiliaries of proper design, material and workmanship to meet specified operation conditions.

1.6 **Other General Requirements**

The design, construction, manufacture, supply & testing and other general requirements of the pump package shall be strictly in accordance with the Process data sheets, P&ID's, equipment datasheets, job specifications, drawings, standard specifications, other referred or attached codes, standards and recommended practices which form part of this Material requisition.

Compliance with this material requisition shall not relieve the VENDOR of the responsibility of furnishing equipment and auxiliaries of proper design, materials and workmanship to meet specified start-up, operating & shut down conditions.

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All equipment, accessories, heaters, motors; instruments etc. incorporated in complete pump package shall be suitable for the specified area classification. For area classification, refer Electrical Specifications.

2.0 APPLICABLE CODES & STANDARDS

The pump packages shall be designed, manufactured, tested and supplied in accordance to API 610 12th Edition. The other requirements of the pump package shall be strictly in accordance with the data sheets, this job specification, P&IDs (as attached), standard specifications and other standards as listed under Table of Contents as well as other referenced codes, standards and recommended practices.

3.0 SAFETY

3.1 Equipment design and engineering shall incorporate adequate safety features [as per applicable specifications of respective equipment as well as environment codes (if any) & standards applicable] to provide protection to equipment and environment.

3.2 All controls shall operate in a fail-safe mode.

3.3 All electrical components & installations, instruments shall be suitable for the electrical area classification and grouping in which the equipment is installed.

3.4 Sight flow glass shall be provided at each isolatable cooling water return line. Thermal relief valves shall be provided for components that may be blocked in by isolation valves (including any cooling water return circuit piping of a cooler or a jacket). Set pressure for Thermal Relief Valve shall be less than or equal to the design pressure of cooling water return header as indicated in Process specifications.

4.0 NOISE LEVEL

Equipment noise level (Driver + Driven equipment train + auxiliaries) shall not exceed 85 dBA when measured at One-meter distance from the equipment skid in any direction (for all operating conditions). This shall be demonstrated at site & if the noise limit exceeds the specified value, the necessary arrangement to meet the noise criteria, shall be provided by VENDOR without any cost implication. Jackets for Noise attenuation around the pump suction and Discharge nozzles for each stages shall be supplied by the VENDOR if found necessary to limit noise level within specified limits.

5.0 SITE & UTILITY DATA

Refer Process input attached elsewhere in the MR.

6.0 LOADING CRITERIA

Not applicable.

7.0 QUALIFICATION CRITERIA (QC)/EXPERIENCE CRITERIA (EC) FOR PUMP

7.1 The offered equipment shall not be prototype design and shall be field proven for similar operating conditions and meet the technical requirements laid out in MR.

7.2 Vendor shall complete the experience record proforma enclosed with the inquiry document to amply prove that the offered pump meets the experience criteria requirement for technical acceptance.

7.3 Alternatively, bidder may be an Indian manufacturer who is a subsidiary of Foreign Principal and the Experience criteria, as specified above, is met by the Foreign Principal or another subsidiary of the Foreign Principal or the holding company of the Foreign Principal, provided the requirement specified in **Annexure-A (Policy on Make in India)** are met.

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7.4 Manufacturer's catalogue and general reference list for offered pump model shall also be furnished along with the proposal.

8.0 SCOPE OF SUPPLY/ WORK & EXCLUSION

8.1 The manufacturer of the proposed pump model shall be the Single Point responsibility VENDOR (SPRV).

8.2 Single point responsibility VENDOR's (SPRV) scope of supply is described in data sheets, specifications, Process P&ID's, equipment layout, "Scope of Supply / Works" and other documents for each discipline forming part of the inquiry document. However, it shall be the responsibility of the SPRV to furnish a safe operating unit. For this purpose, in case SPRV envisages additional equipment / instruments / control and safety devices, the same shall be offered by the SPRV and included in his scope of supply. Such additional items shall be separately listed with reasons for their inclusion.

8.3 Exclusions

Following are excluded from VENDOR's scope of supply:

a. Foundation & civil works.
b. Erection & Commissioning activities (Except supervision on per diem rates).

8.4 Vendor's scope, as a minimum, shall include all components and auxiliary equipments as detailed in the "checklist for scope of supply/work" as required to make a complete and safe operating package.

9.0 UNITIZATION OF PUMP & DRIVER

Unitization of Pump & Driver shall be done in pump manufacturer's shop. All pumps and their Drivers shall be supplied as skid mounted units with all accessories, auxiliaries along with auxiliary piping duly mounted on a single skid.

10.0 BASIC DESIGN

10.1 The pump package and associated equipment shall conform to API 610 12th edition together with Process Data Sheet, P&IDs, this specification, EIL Standard specification 6-41-0008 and other specifications as listed in the table of contents forming part of the MR.

10.2 For pump type, seal type and seal flushing plan, refer Table 1 of this document.

10.3 The pump package shall comply with requirement specified and specifications referred in process datasheets.

10.4 Pumps shall be selected to have their Rated operating point falling in 70% to 110% of BEP flow of the Rated Impeller except for low flow pumps (<= 20 m3/hr) or pump rated BKW upto 15 kW. The bid/proposal shall include the power consumption curve and NPSHR curves from MCF to End-of-Curve flow.

10.5 Pumps shall have stable head/flow-rate curves (continuous head rise from rated to shutoff).

10.6 Preferred Operating Region and Allowable Operating Region to be marked on the characteristic curve for each pump item. The rated and the normal operating points shall be marked on the characteristic curve. The rated flow shall not exceed 110% of pump capacity at best efficiency point.

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10.7 Bidder shall indicate the values of thermal minimum continuous flow (MCF) & stable MCF on the pump data sheet, in the offer. Vendor to specify minimum design flow requirement and associated modifications to controls, piping, instrumentation etc.

10.8 **NPSH margin of NPSHa over NPSHr shall be at least 0.6 m**. Vendor to offer their suitable model considering the same, as the same is a rejection criteria.

10.9 Suction flange rating shall be same as that of discharge flange for all pumps.

10.10 Maximum allowable working pressure & temperature of the equipment shall not be less than the design pressure & temperature as specified in the data sheet nor less than those specified in specifications, codes & standards. Pump MAWP shall also be suitable for testing with water (Sp. Gravity=1.0).

10.11 Pumps shall be suitable for instantaneous startup from ambient to full operating temperature.

10.12 No Cast Iron pressure containing parts shall be used.

10.13 Single and two-stage pumps operating at temperatures less than 150°C and multi- stage pumps operating at temperatures less than 120°C shall be suitable for instantaneous startup from ambient to full operating temperature without any warm-up. For higher operating temperatures the vendor shall provide suitable hardware (i.e. piping, valves & fittings) & as part of the operating manual a suitable startup procedure shall be provided. Any required monitoring equipment (i.e., skin thermo couples) to ensure that the pump, including seal(s), does not incur damage due to rapid heat up shall be supplied by pump vendor.

10.14 The maximum impeller diameter for a single stage overhung pump design operating with 2-pole (50Hz motor), shall not exceed 17 inches (430 mm). Further I(SF) [as per equation K.2 of Annexure K of API 610 12th Edn] ≤ 1.2 times the value from equation K.4 of Annexure K (Refer API 610 12th Ed. for Annexure – K & L3/D4 calculations) shall be followed for all pumps operating with 2-pole (50Hz) motor.

10.15 Double suction single stage, two-stage & multi-stage pumps shall be of in-between bearing types.

10.16 Inducer shall not be used for any of the pumps.

10.17 Pumps shall be directly driven by Electric motor. Pumps driven through gearbox are not acceptable.

10.18 All rotating equipment base plates shall have jacking provision for aligning the prime movers.

10.19 Baseplate drain shall be provided with **2"** flanged connection.

10.20 The maximum permissible running clearances shall not be less than twice the running clearances as specified in API 610.

10.21 Vendor shall provide sufficient drain & vent connection in the pump casing to allow the draining & venting of the pumping liquid completely. A proper draining provision for suction barrel shall be provided.

10.22 As a minimum piping material shall be stainless steel for seal flushing plans and shall be carbon steel for cooling water plans. Also, refer MINIMUM METALLURGY FOR WATER COOLED EXCHANGER specified in Document No. B862-999-80-42-SU-1001 for compliance by the vendor.

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10.23 All pumps shall be provided with Constant level oiler and bearing isolators. Bearing housings shall be provided with a gate valve and magnetic drain plug for inspecting the oil while it is running. Bearing isolators shall be of non contact type and shall meet the requirements of API 610.

10.24 All high temperature pumps with hot circulation provision shall have provision of hot liquid circulation from pump bottom to suction line. This will ensure uniform heating of complete pump.

10.25 Vendor shall fill Utility Data sheet forming part of the Enquiry Document and submit his recomminendation along with his proposal. Vendor, in his offer, shall list all the utilities required for the following (Vendor to furnish item wise breakup for the utilities required):

- Sealing fluid requirement
- Cooling water requirement for bearing cooling
- Cooling water required for seal coolers
- Other utility requirements (if any)

10.26 The maximum shut-off pressure of pumps shall be calculated considering maximum suction pressure and maximum sp. gravity (as mentioned in respective datasheets) and considering pump to be running at motor maximum permissible speed.

10.27 Suction specific speed limitation specified in pump datasheets are to be complied. In case of deviation, the bid shall be liable for rejection.

11.0 Bearing Design & Lube Oil System

11.1 Type of bearings for pumps shall, as a minimum, meet the requirements specified in Cl. 6.10 of API 610 and shall be as per vendor's standard proven design.

11.2 Vendor shall provide details in the ERP (attached elsewhere in the MR) for selected radial and thrust bearings to justify the provenness of the offered design.

11.3 Vendor shall also provide calculations as per API 610 to justify that the offered type of bearings meets the minimum requirements specified therein.

11.4 Pump Lubrication system shall be as per manufacturer standard. Vendor shall furnish necessary and adequate references in the Experience Record Proformas to establish the provenness of the offered pumps for offered type of lubrication.

11.5 Additional Requirements for Fire water Booster Pump (102-PA-7001 A/B):-

B

- Pump shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of rated head .
- The shut off head shall not be more than 120 percent of the rated head-as specified in the PDS.
- Difference between NPSHA and NPSHR at 150 percent of the duty point shall not be less than 0.6 meters. In case bidder is submitting NPSH test curve, he should submit at least 3 test (latest) curves showing repetitive NPSHR obtained at shop.
- All statutory approvals as per governing local/ central laws/ norms/ regulations etc. pertaining to complete Fire Water Pump Package including auxiliaries & associated accessories, as required, shall be in vendor scope.

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- Pump shall have auto-start facility also and shall be stopped manually from field.
- Pump & its drive to comply with requirements of NFPA 20/API .

12.0 Couplings

a) Couplings shall be all metallic, non-lubricated flexible element type (i.e. either diaphragm coupling or disc coupling) with spacer for all equipment. All coupling models shall be selected for a minimum service factor of 1.5 over driver rating.

b) The coupling shall have spacer of adequate length to enable maintenance/replacement of seal/bearings without dismantling any equipment i.e. Pump & Driver. Length of coupling spacer to be necessarily longer than single coupling hub length. The DBSE shall be more than the seal cartridge length and shall facilitate replacement of Seal/bearings without disturbing the Pumps and Drivers.

c) Removable non sparking coupling guard shall be provided over all exposed Rotating parts. Coupling guard shall be fabricated from a non-sparking material and shall be open at the bottom to permit manual shaft rotation and shall be sufficiently rigid to resist a deflection as a result of bodily contact of nominally 100 kgs. Coupling guard shall have a hinge to open and Inspection window to see the healthiness of the coupling shims.

13.0 Auxiliary Piping

- ❖ All auxiliary piping interface connections shall be flanged terminated with a gate valve at the equipment battery limit (i.e. at the edge of the base plate).
- ❖ Purchaser shall provide/receive Water at Single Point Inlet/Outlet at the edge of Baseplate of each Pump for Seal Cooler/Lube-Oil Cooler & Bearing Housing (if applicable). The terminating flanges shall be of 3/4" (minimum) size. Vendor shall provide Sight Flow Glass/TRV at each Cooling Water Outlet.
- ❖ All Customer Piping Interfacing will be done towards any one edge of the Base Plate (Pump, Seal Plan and all auxiliaries mounted on the same baseplate). EIL std. 7-44-0321 attached in the MR shall also be referred.
- ❖ Vendor's scope shall also include Matching companion flanges, gaskets, bolts & nuts etc. at all terminating points requiring purchaser's interface having non-standard sizes/Ratings, including reducer from non-standard size to nearest standard size, as loose supply.
- ❖ Vendor shall fill in ''Template for vendor interface data'' (doc.# B862-101-80-42-BF-5180), during detail engineering stage.

14.0 Mechanical Seals

B

14.1 Mechanical seals shall conform to API Standard 682, 4th edition for centrifugal pumps. Also refer EIL standard specifications 6-41-0009, 6-41-0009-A1, 6-41-0009-A2 & 7-44-0321 attached with MR for seal requirements.

14.2 The type of mechanical seal & seal plans shall be as defined in Table 1 of this document. The pump manufacturer shall also obtain seal manufacturer recommendations regarding the above & furnish the same along with his proposal. Any change required by seal vendor to be highlighted & purchaser's decision shall be obtained during pre-bid stage.

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14.3 Mechanical seals to be suitable for maximum shut-off pressure under static conditions for pusher type seals. For Bellows seal, mechanical seal shall be suitable upto bellows design pressure, as a minimum.

14.4 Seals as offered shall be suitable for stuffing box pressure during operation considering maximum suction pressure case during start-up and shall also be suitable for Maximum shut off/ Maximum Allowable Working Pressure of the pump in static condition. Mechanical seals shall be suitable for Pump Casing design pressure under dynamic condition.

14.5 Stuffing Box Dimensions shall be as per API Standard 610 (ISO:13709).

14.6 For standard mechanical seals, Seal Qualification tests (SQT) shall have been conducted on the proposed mechanical seal model(s). Related certificates shall be provided during detailed engineering stage.

14.7 In case, the offered mechanical seal is intended to be supplied by any of the subsidiaries of the principals of seal manufacturer, following requirements shall be met:

- For standard mechanical seals, for which SQT has been conducted by the principals, critical components such as Bellows, Springs and seal faces shall be sourced from their principals.

- For Engineered seals, the complete mechanical seal along with sleeve and gland plate shall be sourced from their principals. Seal drawings shall be from the principals or duly vetted by principals.

14.8 Any seal offered under "Engineered Seal" category or when seal area/stuffing box is subjected to operating pressure >=20Kg/cm2g (i.e. seals having MDSP>=20Kg/cm2G) shall undergo the following Seal Acceptance Test (SAT):

- All seals installed in one pump per item / tag shall undergo SAT as per the following: "Four hour static test, four hour dynamic test and one hour cyclic test with test fluid selection as per API 682 and test conditions commensurate with either API 682 test conditions or the conditions expected during operation in normal as well as start-up / shut-down conditions, whichever is more stringent. However for temperature, API limit of 260 degree C may be followed for testing in case of high temperature applications."

- Propane testing, as per API 682 4th edition conditions, shall be carried out only for liquids with S.G < 0.6 & pumping temperature of -5 degC to 176 degC or for all flashing hydrocarbons with pumping temperature < -5 degC.

- Additionally, for propane testing, in case operating pressures are higher than API 682 4th Edition test conditions, additional seal acceptance testing with Diesel/Mineral oil (as applicable) shall be carried out at actual operating pressures.(as per above) SAT certificates shall also be furnished as part of final documentation.

- The complete sealing system along with instruments and all accessories shall be mounted/installed on the pump base plate. Aux. Seals/Flushing Systems & Plans/Cooling Systems & Plans shall be as per API 682 requirements & also as per the attached specification requirements.

14.9 Sealing Plan 11/23/52/53A/53B/62:

- The complete sealing system along with instruments and all accessories shall be mounted/ installed on the pump base plate. Aux. Seals/Flushing Systems & Plans/Cooling Systems & Plans shall be as per API 682 requirements & also as per the attached specification requirements.

- Vendor shall furnish recommended Buffer/Barrier Fluids for various pump items in their offer. Fluid shall be suitable for the seal operating environment and approved by the

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mechanical seal supplier. Process compatibility of the recommended fluids shall be checked at purchaser's end and final Buffer/Barrier fluids shall be firmed up during detailed engineering stage. Consideration shall be given to minimize the number of fluids the refiner/client has to stock. Annexure-B shall be referred for special requirements for Seal plan 52/53A/53B.

14.10 Mechanical seals (as per API Std. 682) shall be one of the makes as per vendor list attached elsewhere.

14.11 Seal and Seal systems (i.e. Mechanical Seals & Seal Flushing Plans, as the case may be, shall be designed & supplied by Seal OEM).

14.12 Orientation of seal pot and auxiliary connections :

- The interface points for auxiliary connections (ie. cooling water supply/return, other connections etc.) as well as the seal reservoir (i.e. for seal plan 23/52/53A/53B/62) shall be located on the Left Hand Side, when viewed from non-drive end of pump, of the pump skid. Also refer "Standard for orientation of seal pot and connections of centrifugal pumps", Doc# 7-44-0321, attached elsewhere in the MR.

- Orientation of seal pots/coolers for pumps with seal plans 23/52/53A/53B shall be mirror images of each other for pumps placed below the piperack. List of such pumps will be identified during detailed engineering stage. Mirror images of seal pots shall have clear passage in between the pumps, when two pumps are placed in one bay.

15 ELECTRICAL

15.1 All electrical equipment shall be as per electrical datasheet/specification attached elsewhere.

16 INSTRUMENTATION

16.1 All Instrumentation and controls shall be minimum as per the Instrumentation data sheets, EIL job specifications, EIL standard specifications, P&ID's and any other document attached/specified in the inquiry document.

16.2 For all Single Stage pumps covered in the inquiry, pump vendor to provide provision for mounting 2 Nos. accelerometer probes (X & Y) (supplied separately by purchaser) on each bearing housing for monitoring vibration values in horizontal and vertical directions. The tapping size in the bearing housing shall be 6mm NPT with a depth of 6mm and shall be provided with a cap.

16.3 Also refer Electrical Specifications for Instrumentation requirements w.r.t. motors.

17 INSPECTION AND TESTS

17.1 The scope of Inspection and tests shall be as per the data sheets and other referred /specified standards and specifications forming a part of this inquiry document. Vendor shall take into consideration the complete testing requirements while committing equipment delivery schedules

17.2 All pumps shall be mechanical run tested and performance tested at shop.

17.3 NPSHR test shall be performed when the difference between NPSHA and NPSHR is less or equal to one (1) meter.

17.4 Owner and/or his Consultant may participate along with the Contractor's inspectors in any inspection and tests. The vendor shall notify to owner of all inspection and tests at least four

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weeks before the scheduled date of inspection and test and reconfirm the same at least one week before the date of inspection and testing.

17.5 Vendor shall submit the test procedure for approval of the purchaser at least one month in advance of the actual date of conducting each test.

18 SPARE PARTS

18.1 Mandatory Spares

Bidders shall quote mandatory spares as listed in "Mandatory spare parts (Doc. No. B862-101-80-42-SL-5180)" forming part of inquiry document. The cost of the same shall be added to the total cost of the pump package for the purpose of commercial evaluation.

18.2 Spares For 2 Years Normal Operation

Bidder shall furnish an itemized list with quotation of recommended spare parts/as listed in MR with unit prices for two year normal operation & maintenance of each complete pump package, over & above the mandatory spares (including mechanical, electrical, instrumentation spares). Quotation of these spares shall not be considered for commercial evaluation.

18.3 Erection And Commissioning Spares

Bidder's scope of supply shall include all erection & commissioning spares (as specified elsewhere in inquiry / as recommended by them) (mechanical, electrical and instrumentation) for each pump package as deemed necessary by the vendor. The same shall be included in the base price of the pump package. Any spares consumed over and above the spares supplied along with pump package, shall be furnished by the pump vendor at the time of commissioning without any time/cost implication to the purchaser. Any un-used spare(s) shall be retained at purchaser's end without any cost implication.

18.4 Special Tools And Tackles

Bidders are required to submit a list of special tools and tackles (as recommended by them / as listed in MR) along with the offer which shall be supplied along with the pump package. Minimum special tools as specified in scope of work/supply of job specifications shall be supplied. If no special tools/tackles are required for normal operation and maintenance of pump package, the same shall be categorically indicated in the bid. The prices of the same shall be included in base price of pump package. In addition, manufacturer shall include tools which are specific to Manufacturer's design of the machine for pump package.

19 VENDOR DATA AND DRAWING

The data and drawing required are detailed out under "Vendor Data Requirement (Doc. B862-101-80-42-VDR-5180)" and Vendor Data Required as per Electrical and Instrumentation Sections. Vendor shall ensure that complete data is furnished as required.

Note: Final documentation of 6 sets hard copy + 2 sets soft copy (DVDs) shall be submitted by vendor.

Any other information/ data as required by the purchaser to carryout engineering for construction, installation and commissioning of the package shall be provided by the vendor during detailed engineering stage.

20 EQUIPMENT STORAGE

All pumps shall be packed (export boxing) for an outside storage period of at least 12 months. The following shall be ensured before dispatch of rotating equipments:

- All the openings shall be plugged and sealed conditions during dispatch.

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- Instruments like gauges, speed indicators, probes, oiler etc. shall be removed from the main equipment and dispatched separately to avoid damage to these components while transportation handling and erection.
- In addition to normal packing the pump and motor skids shall be separately covered with transparent polythene cover with opening of piping.

21 INITIAL FILL

The initial fill of lubricants, sealing fluid & other consumables shall not be included in the scope of supply of pump vendor. However, vendor shall furnish list of recommended make oils for bearing lubrication & seal pot buffer liquid (as applicable). Type of oil to be mineral hydrocarbon type. Use of any synthetic oil is not preferred. In case recommended by vendor, same shall be highlighted during pre- bid/ in- bid stage and same shall be included in bidder's scope of supply (part of base price).

22 INSTALLATION CRITERIA

All pumps shall be suitable for outdoor installation and shall be installed on ground floor (i.e. on finished floor level). No equipment shelter is envisaged.

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TABLE 1

S. NO.	PUMP ITEM NO.	SERVICE	PUMP TYPE	SEAL FLUSHING PLAN	SEAL TYPE
1.	101-PA-0006	METHANOL UNLOADING PUMP	OH2	53B	PRESSURIZED DOUBLE MECHANICAL SEAL
2.	101-PA-0007	METHANOL PUMP	BB2	53B	PRESSURIZED DOUBLE MECHANICAL SEAL
3.	102-PA-7001 A/B	FIRE WATER BOOSTER PUMP	OH2	11, 61	SINGLE MECHANICAL SEAL

B

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ANNEXURE-A (POLICY ON MAKE IN INDIA)

The bidder in order to qualify has to offer equipment meeting the Experience criteria and the technical specifications laid out in the Material Requisition.

In order to encourage indigenous vendors to enhance their portfolio and manufacturing capabilities in engagement with their principals and in line with Government of India's policy on "Make in India", EIL offers the following qualification criteria for such subsidiaries which are not meeting the Experience criteria for the offered equipment, but can get qualified based on either their Foreign Principal or another subsidiary of the Foreign Principal or the holding company of the Foreign Principal, meeting the Experience criteria requirement:

In case, the bidder is an Indian manufacturer who is a subsidiary (Principal holding at least 51% shares) of a Foreign Principal and the qualification criteria is met by the Foreign Principal or another subsidiary of the Foreign Principal or of the Foreign Principal's holding company:

(a) Qualification Criteria for Foreign Principal or another subsidiary of Foreign Principal (Principal holding at least 51% shares) hereinafter called "Group Company" of the Foreign Principal or for the Foreign Principal's Holding Company:

1. The Principal or the Group Company shall be in the business of manufacturing of the offered product line (for at least last five years, reckoned from the bid due date) for which the Indian Manufacturer is seeking to bid.

2. The Principal or the Group Company, whose PTR is being considered, shall already be enlisted either with EIL OR is in Licensor's vendor list, for the same product line.

3. The Principal or the Group Company shall have executed at least TWO orders for the same product line[1], within the last five years, reckoned from the bid due date.

Note: All the above criteria shall be met by the same company (either the Principal or the Group Company).

(b) Qualification Criteria for Indian Manufacturer (hereinafter called the bidder):

1. The Bidder must be a subsidiary of the Foreign Principal (Principal holding at least 51% shares) for at least last one year, reckoned from the bid due date.

2. Scope/activity matrix between the Bidder and Principal or the Bidder and the Group Company, shall be submitted to EIL along with the bid. However, the bidder must also note that EIL shall reserve the right to mandate certain activity(ies) or sourcing to be from identified sources only, ***(#)*** depending upon the product line under consideration and its criticality. The bidder shall not claim any extra payment on account of any change in sourcing inline with EIL's requirement.

3. The bidder shall source critical components OR the bare tested machine from the Principal or the Group Company or directly from the manufacturers supplying the same to the Principal or the Group Company (a certificate to this effect shall be provided by the Principal or the Group Company) and source non-critical components / auxiliary components supplies himself (subject to # above).

4. The bidder shall have the necessary engineering, manufacturing capability and adequate infrastructure comprising of space, manpower, equipment corresponding to matrix cited above,

1 ***Same Product Line for Principal or Group Company: Same type of Equipment being sought in the inquiry [e.g. Centrifugal Horizontal Pump (API 610, OH2/BB2) (Special purpose process) compliant to API610 having equal or higher driver power vis a vis offered driver power].***

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duly approved by the Principal or the Group Company, as the case may be, for the product line under consideration.

5. As a minimum, the Principal or the Group Company as the case may be, shall carry out the following activities:
   - Design / Application engineering
   - Approval of sourcing of components
   - Approval of Quality Assurance Plans (QAP) identifying Hold, Check & Witness stages (by Principal)
   - Responsibility Matrix

6. The bidder shall have Manufacturing, Assembly and Testing facility for the proposed scope. However, in the remote case of the Manufacturer not having testing facility at all or not having appropriate testing facility, the Manufacturer shall outsource testing to another independent testing facility subject to acceptance by EIL.

7. The Bidder shall have an established service facility in India (either his own or an approved service provider) which must be approved by Principal or the Group Company, as the case may be.

8. The Bidder shall have executed and supplied minimum two orders in the same product line[2].

9. The Bidder shall be enlisted with EIL for the same product line[2].

Documentation required (along with the bid and in single lot)

1. General reference list of Principal or the Group Company for the same product line, for the last five years as well as General reference list of the bidder for the same product line.
2. Scope / Activity Matrix
3. Certificate of Incorporation of the Bidder
4. Documents for establishing the bidder as a subsidiary of the Foreign Principal (Principal holding at least 51% shares)
5. Documents for establishing the relationship of the group company, if applicable.
6. Letter from the Principal or the Group Company (as the case may be) confirming that the bidder's engineering facility, manufacturing, testing & assembly facility and service facility in India is duly approved by them.
7. Certificate for sourcing of critical components (as applicable).
8. Corporate Guarantee of the Principal or the Group Company (in the format provided by EIL)

[Note: The bidder may carry these documents during pre-bid meeting, in case they desire to seek some clarification from EIL. However, formal submission of documents shall only be with bid submission.]

2 ***Same Product Line for Indian manufacturer: Same type of Equipment being sought in the inquiry [e.g. Centrifugal Horizontal Pump (API 610, OH2/BB2) (Special purpose process) compliant to API610 having at-least 50% of the offered driver power].***

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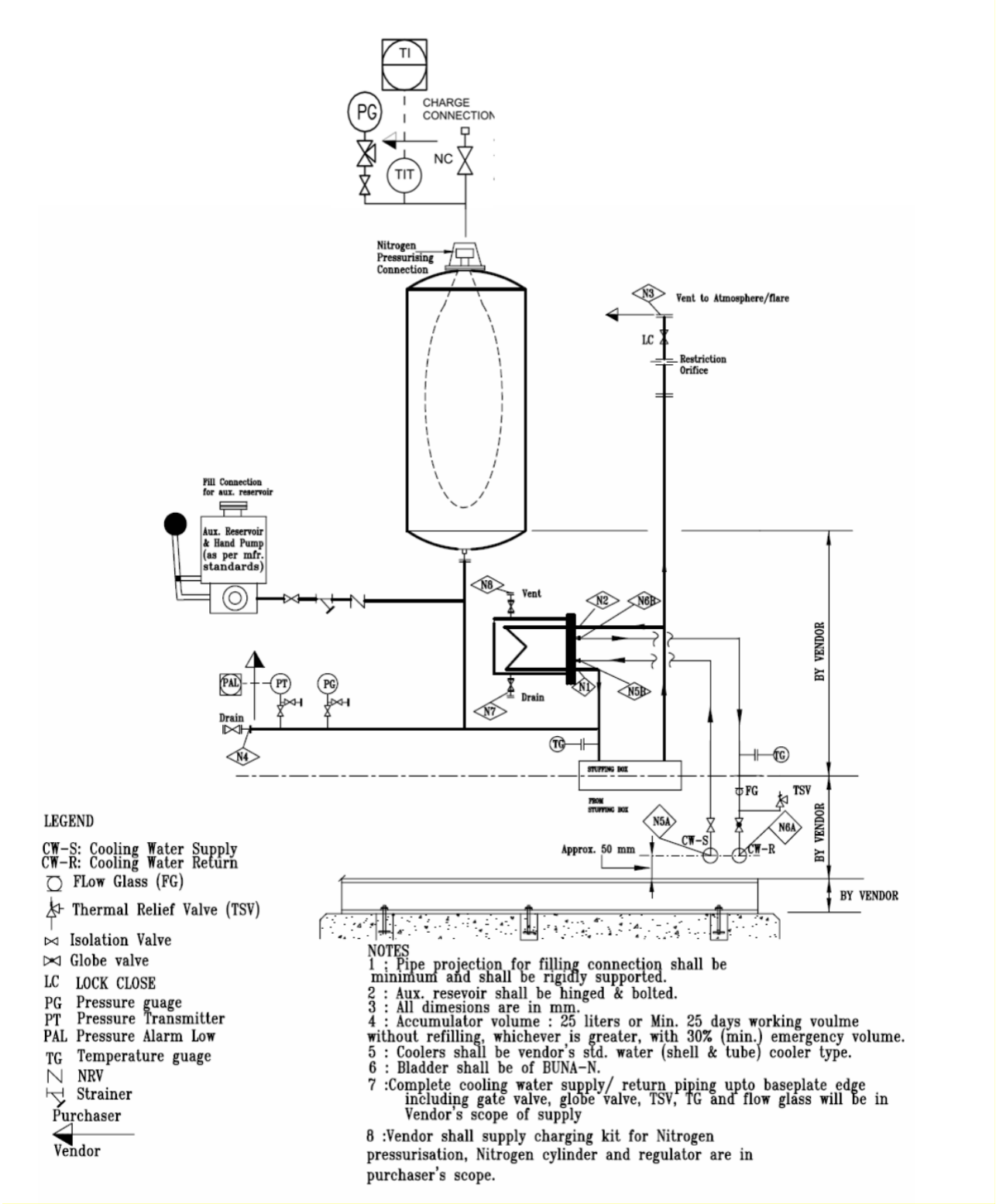
ANNEXURE-B

TYPICAL SKETCH FOR SEAL PLAN 53B



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DESIGN PARAMETERS (for Plan 53B)		
Optg. Pressure (kg/cm²g) / Optg. Temp (°C)	:	**As per respective pump data sheets**
Design Pressure (kg/cm²g) / Design Temp (°C)	:	**40.0 (min.) / Ambient (min.) §**
Hydro test pressure (kg/cm²g):	:	**1.5 times Design Pressure**
MOC of Reservoir	:	**SS 316L**
MOC of Bladder	:	**BUNA-N**

§ Sealing system shall be designed for shutoff pressure/casing design pressure at design temperature.

NOZZLE SCHEDULE

Nozzle	Service	Size, mm (")	Min. ANSI Rating §	Flange type (Rem 6)
N1	To:seal	20 (3/4")	300#	SWRF
N2	From Seal	20 (3/4")	300#	SWRF
N3	Vent	15 (1/2")	3000#	SWRF
N4	Drain	20 (3/4")	300#	SWRF
N5A	Cooling water Supply @ grade	20 (3/4")	150#	SWRF
N5 B	Cooling Water Inlet	15 (1/2")	300#	SWRF
N6 A	Cooling Water Return @ grade	20 (3/4")	150#	SWRF
N6 B	Cooling Water Outlet	15 (1/2")	300#	SWRF
N7	HE Drain	15 (1/2")	300#	NPT (F)
N8	HE Vent	15 (1/2")	300#	NPT (F)

INSTRUMENTS

Description	Function	Required	Remark
Temperature Gauge (TG)(Barrier Fluid)	Temperature Indication Local	YES	
Pressure Gauge (PG) (Barrier Fluid)	Press. Indication Local	YES	
Pressure Transmitter (PT)	Press. Alarm Low (PAL)	YES	
Temp. Safety Valve (TSV)	--	YES	
Restr. Orifice (RO)	--	YES	
Flow Glass (FG)	--	YES	
Temperature Gauge (TG) (CW-R)	Temperature Indication Local	YES	

REMARKS

1. The Barrier fluid reservoir shall be arranged in accordance with the schematic shown in the drawing.
2. The reservoir and piping shall be designed, fabricated & tested in accordance with
   - ISO 15649/ASME B 31.3 using Piping component
   - ASME Sec VIII Div 1
3. The complete seal system for each stuffing box including the reservoir shall be arranged as one skid and supported/bolted to the base plate in a manner that the projection of any equipment/instruments falls within the confines of base plate. The reservoir and the accessories to be mounted on a structural support furnished by the manufacturer and should not be affected by the pump vibration. In case of between bearing pumps there shall be two such units, one each for each stuffing box mounted on opposite ends of the pump.
4. The mechanical design of auxiliary piping shall achieve the following:
   a) Proper support and protection to prevent damage from vibration or from shipment, operation & maintenance.

   b) Proper flexibility and normal accessibility for operation, maintenance and thorough

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cleaning.

c) Installation in a neat and orderly arrangement adapted to the contour of the machine withoutobstructing access openings.

d) Elimination of air pockets by the use of valved vents or non-accumulating piping arrangements.

e) Complete drainage through low points without dis-assembly of piping, seal or gland components.

f) Reduce the number of potential emission sources and pressure drops by minimising the use of threadedconnections, flanges, fittings and valves.

5. Refer Instrumentation specification for details of instruments.
6. Flange type specified in the table above is for sealing system design of 300# rating. Wherever the sealing system design exceeds 300# rating the flange type for complete sealing system (including coolers etc.) shall beas per standard ASME B 16.5

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| | | |

64	6) Alternatively, SS304L / SS316L (API 610 MOC Class A-8) are also acceptable as impeller MOC.				
65	7) Pump mcf flow can not be more than 4.5 m3/hr.				
		13/02/2026	A	SLM/MK	JSD/TK
		DATE	REV.	JOB ENGINEER	REV. & APPROVED BY

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| | | |

62	4)Pump centerline elevation is assumed to be 1000 mm from grade (including 300mm foundation height) and methanol storag drum btl at at 1.5 m for NPSHa calculation. Reported NPSHa is at pump centerline.
63	5) Barrier fluid for seal plan 53B: Vendor to recommend.
64	6) Alternatively, SS304L / SS316L (API 610 MOC Class A-8) are also acceptable as impeller MOC.
65	7) Pump mcf flow can not be more than 4.5 m3/hr.

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| | | |

62	4)Pump centerline elevation is assumed to be 1400 mm from grade (including 300mm foundation height). Reported NPSHa is at pump centerline.
63	5)Pump shall be capable of furnishing not less than 150% of rated capacity at a head not less than 65% of rated head.
64	6)Shut off head shall not exceed 120% of rated head.
65	7)Pump shall have autostart facility also and shall be stopped manually from field
66	8)Refer pumping P&ID no. B862-102-17-43-11111 for more details
67	9)Pump & its drive to comply with requirements of NFPA 20/API .
68	10) External PSV at pump discharge (as indicated on pump P&ID attached with MR) shall be supplied by Pump vendor as "Loose supply".

		8/4/2026	A	NB/ MK	JSD/TK
		DATE	REV.	JOB ENGINEER	REV. & APPROVED BY

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LOADING & PENALTY CRITERIA FOR PUMP CENTRIFUGAL HORIZONTAL (SPP)

PROJECT	:	**PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**
UNIT NAME / NO.	:	**PROPANE DEHYDROGENATION UNIT (PDH) / 101**
CLIENT	:	**M/s PETRONET LNG LIMITED**
CONSULTANT	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
B	08/04/2026	REVISED FOR BIDS	NB/MK	JSD/TK	NK
A	13/02/2026	ISSUED FOR BIDS	NB/MK	JSD/TK	NK

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1. SCOPE

This specification describes the loading & penalty criteria applicable to following Horizontal Centrifugal Pumps (Special Purpose Process) included in this MR:

SR NO	ITEM NO	SERVICE	QTY
1.	102-PA-7001 A/B	Fire water Booster Pumps	1W+ 1S

2. PERFORMANCE GUARANTEES

Loading and penalty criteria shall be based on the guaranteed performance of the Pump.

The parameter for loading & penalty shall be BKW of Pump at the specified guarantee operating point i.e. maximum power case considering maximum specified specific gravity and maximum viscosity of pumping liquid out of all the cases as specified in the Pump datasheet.

Bidder shall furnish in the offer, the guaranteed values for BKW of pumps (BKW_G) including all losses with zero per cent positive tolerance (i.e. no API tolerance is permitted) including errors in instruments and measurement. Bidder must submit the guaranteed BKW in a format (attached elsewhere with the enquiry document) along with the bid.

The offer, not submitting the guaranteed BKW shall be considered as incomplete offer and shall be liable for prima-facia rejection.

3. LOADING CRITERIA

3.1 Total Cost

The total cost of a pump item (including all working & standby units) specified in a group shall be computed as under for evaluation purposes:

Total cost of a *GROUP OF PUMPS* for evaluation purposes= A + B + C +D

Where:

A = Capital cost of all pump packages of an item number (including all working & standby packages) specified in a group including cost of commissioning spares and special tools

B = Cost of mandatory spares

C = Differential operating cost as defined here under in Clause# 3.2.1

D = Cost of supervisory days for erection and commissioning of all pump packages specified in a group i.e. (N_1 x S_1)

N_1 = Total No. of pumps in the Pump packages in a group including working & standby.

S_1 = No. of man-days to be considered for supervision of erection & commissioning of each installed electric motor driven pump package. For each pump package, the supervisory cost of 5 man-days shall be considered.

3.2 Differential operating cost

3.2.1 Differential operating cost (C) is defined as under:

$$C = N_{OP} \times (BKW_{G(E)} - BKW_{G(R)}) \times C_F \times 8000 \times D_F$$

Where:

N_{OP} = Number of operating units in each group

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$BKW_{G(E)}$ = Guaranteed shaft power (kW) for the centrifugal pump quoted by the bidder under evaluation.

$BKW_{G(R)}$ = Lowest quoted (guaranteed) pump BKW (amongst the technically acceptable bidders)

C_F = Cost of Electric Power, Rs **9.44** per kWh.

8000 = Number of operating hours per year.

DF = Discounting factor to arrive at Net Present Value (NPV) based on number of operating years as defined under clause 3.2.2.

3.2.2 Discounting factor (D_F) is defined as under:

$$DF = \sum_{n=2}^{n=k+1} [1 / \{1+ (X/100)\}^n]$$

Where:

k = Number of operating years for which loading is to be done as specified i.e. **5** Years.

X = Percentage rate of interest = **12%** per year

DF = **3.2185**

[The above formula considers one year time for start-up of operation.]

3.3 The maximum loading to be applied however shall not exceed **10**% of the total capital cost i.e. (A+B) as defined in clause 3.1.

4. PENALTY CRITERIA

During the performance test at the vendor's works, in case the pump(s) fail to meet the guaranteed values, the following procedure shall be followed.

4.1 In case during shop performance test, the power consumed by centrifugal pump (BKW_T) exceeds the stipulated guaranteed BKW_G (as defined under clause 2.0) the subject pump package gets rejected.

4.2 In such scenario, bidder shall carry out necessary shop performance re-tests after repair / rectification / modification / replacement at his own cost & time to prove bidder quoted guaranteed BKW. All such re-tests shall be conducted at the earliest.

4.3 However, if the shortfall in guaranteed BKW is still not met, bidder & owner will mutually agree on the method & possibilities of further rectification.

4.4 If the pump is still not found capable of performing within the guaranteed BKW_G, it shall be owner's decision with respect to "rejection" (or) "acceptance with penalty upto a maximum four percent (4%) for excess power (BKW) consumed over and above the bidder quoted guaranteed BKW_G", which shall be final & binding on the bidder.

4.5 In case owner exercises the acceptance with penalty option, for excess power (BKW) consumed over and above the guaranteed BKW up to a maximum of four percent (4%), the bidder shall be penalized for extra energy consumption for each pump having tested BKW greater than the guaranteed value, as defined hereunder:

$$P_C \text{ (in Rupees)} = M_F \times (BKW_T - BKW_G) \times C_F \times 8000 \times D_F$$

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Where:

BKW_T = Pump BKW as obtained from shop test results

BKW_G = Guaranteed pump BKW as defined in 2.0 above

MF = Multiplying Factor = $\frac{\text{Number of operating units } (N_{OP})}{\text{Total No. of Units (N)}}$

C_F = Cost of Electric Power, **9.44** Rupees per kWh.

D_F = Discounting factor to arrive at Net Present Value (NPV) based on number of operating years as defined under clause 3.2.2

4.6 For each pump item, the maximum penalty to be charged for non conformance to guaranteed values during the shop performance test as calculated in clause 4.5, shall not exceed **10** % of the total capital cost i.e. (A+B) as defined in clause 3.1.

4.7 This penalty shall be independent of any other penalties specified elsewhere in the bid/inquiry documents.

4.8 The equipment bidder/supplier shall not be entitled to any payment or any extension of time for any remedy / replacement / rectification, as mentioned above.

5. In-case of suo-moto change in guaranteed power consumption value (i.e. pump shaft BKW) by the bidder after submission of their offer, the changed guaranteed power consumption value shall be considered for techno-commercial evaluation for Loading & Penalty purposes as per the methodology mentioned below:

(1) In-case the changed guaranteed power consumption values are higher than the originally quoted values, bidder's bid/offer shall be rejected.

(2) In-case the changed guaranteed power consumption values are lower than the originally quoted values, the guaranteed values contained in original proposal are to be considered for the purpose of loading for commercial evaluation. However, the changed guaranteed power consumption values (which are lower than the originally quoted guaranteed values) shall be considered for ordering and applicable penalties during Performance Test.

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VENDOR DATA REQUIREMENTS
FOR
VENDOR DATA REQUIREMENTS FOR PUMP- CENTRIFUGAL HORIZONTAL (SPP)

Rev. No.	Date	Purpose	Prepared by	Checked by	Approved by
A	19-FEB-2026	ISSUED WITH MR	SL/MK	JSD	TK

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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.	Document Control Index (DCI) or Supplier / Vendor Drawing & Documentation Schedule (This shall be the first document to be submitted by vendor immediately after FOI)		✔			
2.	General Arrangement & Foundation drawing showing main as well as all associated equipment / skids (driven equipment, drive transmission devices, driver (motor), lube oil system, local gauge board, local control panel, etc.) with interface connection, maintenance space, cable trays, table of termination points and details of foundation bolts, their location, foundation bolt pocket dimensions, foundation load data (static & dynamic)	✔	✔		✔	
3.	List of Mandatory Spares (indicating exact name of the part, part no. and material of construction)	✔	✔		✔	*Duly signed & stamped document B862-101-80-42-SL-5180 along with bid*
4.	Quotation for recommended spare parts for two years of normal operation (indicating exact name of the part, part no. and material of construction)	✔			✔	
5.	List of recommended commissioning spares (indicating exact name of the part, part no. and material of construction)	✔		✔	✔	
6.	List of recommended Special Tools & Tackles (indicating exact name of the part and part no.)	✔		✔	✔	
7.	List of Deviations to specifications/datasheets/standards of MR	✔				
8.	Duly filled in, signed & stamped "Technical Details Proforma (doc.# B862-101-80-42-TD-5180)".	✔				
9.	Duly filled-in, signed & stamped check list scope of supply	✔			✔	
10.	Tabulation of Utility consumption data including electric load data, schedule of lubricants, chemicals & consumables with specifications	✔		✔	✔	
11.	Data Sheets alongwith performance curves - Pump	✔	✔		✔	
12.	Duly filled-in and signed & stamped Technical Compliance Statement	✔				
13.	Duly filled-in, signed & stamped Experience Record Proforma for Pump (doc.# B862-101-80-42-ER-5180).	✔				
14.	Duly signed and stamped licensor Process Specification/Datasheet for Pump and P&IDs.	✔				

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S. NO.	DESCRIPTION	WITH BID	POST ORDER			REMARKS
			FOR REVIEW	FOR RECORD	WITH DATA BOOK (FINAL)	
15.	Duly filled in, signed & stamped "NPSH calculation sheet (doc.# B862-101-80-42-TD-5181)".	✔				
16.	Duly signed & stamped pre-bid queries & copy of Technical amendment, if any	✔				
17.	Analysis Reports - Lateral critical speed analysis / Torsional critical speed analysis			✔	✔	
18.	Dynamic balancing report (as applicable)			✔	✔	
19.	Cross Sectional Drawings (with Bill of Materials & Part Nos.) for Pump			✔	✔	
20.	Precommissioning & commissioning procedures for the complete pump package			✔	✔	
21.	Allowable forces and movements pump at suction and discharge nozzles			✔	✔	
22.	List of loose supply items in vendor's scope, to be installed in purchaser's piping			✔	✔	
23.	GAD for Gear box /Couplings (as applicable)			✔	✔	
24.	Test Procedure(s) : Witness tests as specified in data sheets / other specs enclosed in the inquiry / MR or as required by approved ITP/QAP			✔	✔	@
25.	Wk2 / GD2 value of equipment rotor system referred to driver shaft			✔	✔	
26.	Curve for pump power-shaft speed v/s torque			✔	✔	
27.	Installation, Operation & Maintenance manuals - Pump			✔	✔	
28.	GAD - Sealing system - Seal plan			✔	✔	
29.	Cross Sectional Drawings (with Bill of Materials & Part Nos.) - Sealing system - Mechanical seal			✔	✔	
30.	Test Procedure(s) : MRT, Performance test, NPSH test.		✔		✔	@
31.	Template for Vendor Interface data		✔		✔	
32.	Pump & Seal P&IDs		✔		✔	

Notes :

1. "TICK" denotes applicability.
2. Post order, drawing / document review shall commence only after approval of Document Control Index (DCI).
3. All post order documents shall be submitted / approved through EIL eDMS portal.
4. Final documentation shall be submitted in hard copy (Six prints) and soft (two CDs/DVDs) in addition to submission through EIL eDMS.
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 /

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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. Also refer other department's VDR :-
12. Electrical
13. Instrumentation

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SUB-VENDOR LIST

PUMP-CENTRIFUGAL HORIZONTAL (SPP)

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

UNIT/UNIT NO. : **PROPANE DEHYDROGENATION UNIT (PDH) / 101**

CLIENT : **M/s PETRONET LNG LIMITED (PLL)**

CONSULTANT : **M/s ENGINEERS INDIA LTD.**

JOB NO. : **B862**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
A	19/02/2026	ISSUED FOR BIDS	SLM/MK	JSD/TK	NK

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1.0 GENERAL

1.1. Vendor shall necessarily procure all the sub-ordered items / components forming permanent part of the main equipment from OWNER / EIL / LICENSOR approved sub-vendors only. The “Approved Vendors” shall be item specific.

1.2. OWNER / EIL approved sub-vendor list for the various items is enclosed in this section. For licensor vendor list if any, process specifications shall be referred.

1.3. Vendor may procure material from any of OWNER / EIL / LICENSOR approved sub-vendors. However, current validity, holiday status and range of approval as per EIL enlistment letter, workload, stability and solvency need to be verified by the vendor before placement of order. Vendor is also required to ensure that experience criteria, specified elsewhere in the bid document, are also simultaneously met.

1.4. Sub-Vendors on OWNER / EIL holiday list shall not be considered for ordering. Vendor shall comply with this requirement without any time or cost implication to the OWNER. If a sub-vendor is put on OWNER / EIL’s holiday list subsequent to vendor placing an order, it shall be vendor’s responsibility to ensure quality work and timely supply from the sub-vendor.

1.5. For item/s not covered in the list, the vendor shall FIRST approach OWNER/EIL for item/s list. In case EIL vendor list is not available for any specific item, vendor’s proposed sub-vendors list shall be approved by OWNER / EIL prior to placement of order by vendor. Vendor shall list down the proposed suppliers / vendors for such items and submit the same for OWNER / EIL’s review / approval along with necessary documents / credentials. “Approval status” documents / credentials to be furnished by the vendors in such cases shall solely be the responsibility of the Vendor. OWNER / EIL’s decision on above shall be final and non negotiable. Non-acceptance of a particular proposed sub-vendor due to any reasons whatsoever shall not be a cause of schedule and cost implication.

1.6. Vendor shall make an independent assessment of capability of all the sub-vendors for timely deliveries of material/ equipment. Any delays in deliveries by sub-vendor(s) shall not be a cause of schedule and cost implication.

1.7. At any stage of the project, if it comes to the notice of OWNER / EIL that VENDOR has procured material / equipment, intentionally or unintentionally whatsoever, from an unapproved sub-vendor and/or items not falling in approved range of sub-vendor(s), the same shall be rejected forthwith and Vendor shall be liable to replace such material / plant / machinery without any schedule and cost implication to the OWNER.

2. SMED-ROTATING EQUIPMENT:

As per supplier list attached with this document.

3. ELECTRICAL:

As per Electrical Supplier List attached elsewhere in inquiry.

4. INSTRUMENTATION:

As per Instrumentation Supplier List attached elsewhere in inquiry.

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 04MH		**Description :** MECH.SEAL FOR PUMPS/AGITATORS		
Approved Suppliers				
1	3754	EAGLEBURGMANN INDIA PRIVATE LIMITED	INDIA	
2	4150	HI-FAB ENGINEERS PRIVATE LIMITED	INDIA	
3	A750	AESSEAL PLC	UNITED KINGDOM	
4	J078	JOHN CRANE SEALING SYSTEMS INDIA PVT. LTD.	INDIA	
5	3858	SEALMATIC INDIA LIMITED	INDIA	
6	F149	FLOWSERVE SANMAR PRIVATE LIMITED	INDIA	
7	L060	LEAK PROOF ENGG (I) PVT. LTD	INDIA	
8	E153	EAGLEBURGMANN INDIA PRIVATE LIMITED	INDIA	
9	C753	CHETRA DICHTUNGSTECHNIK AG	GERMANY	

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Bidder shall furnish in his bid, the following tables (Table 1 & Table 2) for each pump item completely filled-in:

Table 1 (Offered Pump Model Technical Details)

Sr. No.	Pump tag No.	Offered Pump detail {Vendor to Fill-in}																						
		Pump Model No.	Nozzle Size and Rating		NPSHA @ Pump C/L (m)	NPSHR @ Rated point / MCF (whichever is higher) (m)	NPSHR @ 120% of BEP (m)	Max. Imp. Dia. (mm)	Rated Imp. Dia. (mm)	Min. Imp. Dia. (mm)	Head rise available at rated conditions by replacing rated dia impeller by max dia impeller (%)	Pump MCF (m^3/hr)	Pump BEP flow (m3/hr)	Ratio of Rated Flow to BEP Flow (%)	Shut-off head (m)	Ratio of Shutoff head to Rated Head (%)	Shutoff pressure considering maximum suction pressure& maximum density (kg/cm^2g)	Suction specific speed (<13000)	Downstream Design Pressure kg/cm2g	MAWP @ Design Temperature kg/cm2g	BKW at Rated point (kw)	BKW at End of curve (kw)	BKW at MCF (with water) (kw)	Offered Driver Rating (kw)	Offered API 610 Material Class	Offered API 682 Seal Plan
			Suct.	Disch.																						
1.	101-PA-0006																									
2.	101-PA-0007																									
3.	102-PA-7001 A/B																									

B

Table 2 (Pump Vendor Confirmations)

Sr. No.	Pump tag No.	Vendor's Confirmations (Yes/ No)																		
		Is NPSHA-NPSHR at rated point ≥ 0.6?	Is NPSHA ≥ NPSHR at 120% of BEP? (applicable for parallel operation, auto start against open discharge valve)	Is 5% Head rise available at rated conditions by increase in impeller dia?	Is flow vs head performance curve of pump continuously rising from rated to shut off ?	Is 10% head rise available from rated head to shut off head? (applicable for parallel operation)	Is MCF less than Normal/ Rated flow?	Is Rated flow within 70% to 110% of BEP?	~~Is suction speed within limits as specified in UOP spec 5-11-14?~~	Is Driver rating meets margin requirement at rated point as specified in Standard Specification 6-41-0008?	Is driver suitable for auto start/ parallel operation? (as required)	Is driver suitable for operation with water at MCF?	Offered pump meets experience criteria?	Is offered pump based on experience of any other company and the offered pump is as per MII	Is offered MOC Material class is as specified in MR?	Is offered seal plan as per MR?	Is [ISF (SI Unit)] / (L3 / D4)" ≤1.2	Is Pump shut off pressure (considering max suction pressure & max density) less than downstream design pressure?	Is Pump MAWP greater than or equal to downstream design Pressure @ Design Temp ?	~~Is bidder's offer in compliance to UOP pump datasheet & UOP spec 5-11-14?~~
1.	101-PA-0006																			
2.	101-PA-0007																			
3.	102-PA-7001 A/B																			

B

Note 1: *Bidder shall refer to process datasheets and also other specifications attached in the MR and shall quote accordingly.*

Bidder's Seal & Signature

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NPSH CALCULATION SHEET- B862-101-PA-MR-5181

Tag No	Service	Pump Model	Pump centerline elevation from Grade (including 300mm foundation hight) (mm)	NPSHA @ pump centerline elevation (mm)	Impeller centerline from grade	NPSHA @ Impeller centerline	NPSHR @ rated	NPSHR @ 120% BEP	NPSHR @ MCF	NPSH margin @ rated
101-PA-0006	METHANOLUNLOADINGPUMP		1000	5700						
101-PA-0007	METHANOL PUMP		1000	6600						
102-PA-7001 A/B	FIRE WATER BOOSTER PUMP		1400	> 10000						

LIST OF DEVIATIONS TO TECHNICAL SPECIFICATIONS

PROJECT	:	**PDH-PP PLANT WITH ETHANE PROPANE HANDLING FACILITIES**
UNIT	:	**PROPANE DE-HYDROGENATION UNIT**
CLIENT	:	**M/s PETRONET LNG LIMITED**
CONSULTANT	:	**M/s ENGINEERS INDIA LTD.**
JOB NO.	:	**B862**
RFQ NO.	:	
NAME OF THE VENDOR	:	
VENDOR'S REF. NO.	:	

NOTES:

1. Bidder shall note that only those deviations to specified standards & codes (if any), shall be permitted which are technically infeasible to be met, provided suitable justification for the same is furnished. Deviations, which can be complied with extra cost and or time implication, shall not be permitted.

2. Any deviations/deletions/corrections made elsewhere in the body of the bidder's proposal will not be taken cognisance of and all such deviations shall be deemed to have been withdrawn by the bidder.

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TITLE OF THE DOCUMENT:_____

DOCUMENT NO.:_____

Sl. No.	Document No.	Clause No.	Technical requirements specified as per inquiry document	Vendor Deviation	Reason for Technical Deviation / Technical Justification	Remarks

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TECHNICAL COMPLIANCE STATEMENT

(TO BE SIGNED BY VENDOR'S PRINCIPAL CORPORATE LEVEL SIGNATORY ON COMPANY LETTERHEAD)

I, ON BEHALF OF M/s_____ CONFIRM THAT THE PROPOSAL OF ----------

----------QUOTED BY M/s_____ ***FOR PDH-PP PLANT WITH ETHANE-PROPANE HANDLING FACILITIES PROJECT OF M/s PETRONET LNG LIMITED (PLL) AT DAHEJ, GUJARAT*** AGAINST MATERIAL REQUISITION No. ----------

---------- IS IN TOTAL COMPLIANCE TO THE FOLLOWING,

A. LICENSOR PROCESS SPECIFICATIONS INCLUDING DATA SHEETS & P&IDs

B. SCOPE OF SUPPLY AND WORK

C. EQUIPMENT DATA SHEETS

D.BATTERY LIMIT/INTERFACE REQUIREMENTS

E. TECHNICAL AMENDMENT IF APPLICABLE

F. ANY OTHER DOCUMENT ATTACHED AS PART OF MR

AS WELL AS ALL THE TECHNICAL SPECIFICATIONS 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.

(SIGNATURE WITH SEAL)

UTILITY REQUIREMENTS

Sl. No.	Package or Equipment No.	Stage	Cooling Water			DM Water			Service Water		
			Flow	Pressure	Temp.	Flow	Pressure	Temp.	Flow	Pressure	Temp.
		Preliminary									
		Final									

Sl. No.	Package or Equipment No.	Stage	Boiler Feed Water			LP Steam			HP Steam		
			Flow	Pressure	Temp.	Flow	Pressure	Temp.	Flow	Pressure	Temp.
		Preliminary									
		Final									

Sl. No.	Package or Equipment No.	Stage	Nitrogen		Instrument Air		Plant Air		Seal Plan
			Flow	Pressure	Flow	Pressure	Flow	Pressure	
		Preliminary							
		Final							

EXPERIENCE RECORD PROFORMA
PUMP-CENTRIFUGAL HORIZONTAL (SPP)

ITEM NO./ SERVICE :_____

NOTES TO BIDDERS:

1. Prototype pump model/model series shall not be considered.

SL. NO.	PARAMETER	INFORMATION ON PROPOSED MODEL	INFORMATION ON REFERRED EXISTING INSTALLATIONS			REMARKS
			Ref.-1	Ref.-2	Ref.-3	
1	**GENERAL**					
2	Whether the Bidder's pump offer is under Make in India (MII)? **Yes / No** If yes, Whether all required supporting documents have been submitted by Bidder? **Yes / No**					
2.1	Model Series					
2.2	Model Number					
2.3	Type of Driver					
2.4	Driver Rating (kW)					
2.5	Driver Rated Speed (rpm)					
2.6	No. of unit(s)					
2.7	Shop from where pump is designed, manufactured, packaged, tested & supplied					
2.8	In case pump testing is outsourced, Mention place of testing.					
3	**OPERATING CONDITIONS**					
3.1	Service					
3.2	Pumping Liquid					
3.3	Specific Gravity					
3.4	Viscosity (cp)					
3.5	Pumping temperature (deg C)					
3.6	Rated Capacity (m^3/hr)					
3.7	Rated Diff. Head (m)					
3.8	Pressure (Suction/Discharge/Design) (kg/cm2g)					

Place:
Date:

[Signature of Authorized Signatory]
Name:
Designation:
Seal:

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SL. NO.	PARAMETER	INFORMATION ON PROPOSED MODEL	INFORMATION ON REFERRED EXISTING INSTALLATIONS			REMARKS
			Ref.-1	Ref.-2	Ref.-3	
3.9	Design temperature (deg C)					
3.10	NPSHR (m)					
3.11	Efficiency (%)					
3.12	No. of stages					
3.13	Minimum Continuous Stable Flow, (m3/hr)					
3.14	Rated Speed					
3.15	Whether the proposed model and reference models have identical hydraulic and design (for impeller / diffuser / volute)					
3.16	Impeller Dia. (Max/Rated/min.) (mm)					
3.17	Impeller Arrangement / No. of Impellers					
3.18	Minimum continuous flow (m3/hr)					
3.19	Type of lubrication system					
3.20	Pump Speed RPM					
3.21	Type of Bearings					
3.22	Type of Mechanical Seal					
3.23	Shaft Diameter under Bearing (mm)					
3.24	Casing MAWP (15°C / PT / Design Temperature)					
3.25	Bearing Span (m)					
4	**MATERIAL OF CONSTRUCTION**					
4.1	Casing					
4.2	Impeller					
4.3	Shaft					
5	**OTHER INFORMATION ON INSTALLATIONS**					
5.1	Date of supply					
5.2	Date of commissioning					

Place:
Date:

[Signature of Authorized Signatory]
Name:
Designation:
Seal:

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SL. NO.	PARAMETER	INFORMATION ON PROPOSED MODEL	INFORMATION ON REFERRED EXISTING INSTALLATIONS			REMARKS
			Ref.-1	Ref.-2	Ref.-3	
5.3	Has the reference pump completed one year of operation at site					
5.4	Purchaser's Name, Address, Contact No. & email ID					

Place:
Date:

[Signature of Authorized Signatory]
Name:
Designation:
Seal:

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JOB NO: **B862**

PROJECT: **PDH PP Plant with Ethane and Propane handling facilities**

CLIENT: **PETRONET LNG LIMITED (PLL)**

REFERENCE DOC NO:

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1.0 SITE INFORMATION

1.1 PLANT LOCATION

1. Site locations

A) PLL Dahej

a. State/Country: Gujarat/India
b. Nearest Important Town: Dahej, Bharuch
c. Nearest railway station: Bharuch
d. Nearest Airport: Vadodara (140km), Surat (150 km)
e. Nearest national highway: Mumbai-Ahmedabad
f. Nearest Port:
i) For feed import:- Dahej Jetty
ii) For equipment handling:- HAZIRA, Navaseva, Dahej, JNPT & Mumbai.

g. Rainy season: June to September

h. Sources of Water:
Raw water from GIDC at Battery limit of complex.

i. Annual Rainfall Max/min/Av. : Refer section 4.1

1.2 METROLOGICAL DESIGN DATA

1.2.1 METEOROLOGICAL DATA

This section presents relevant data towards preparing process engineering specifications.

S.No.	Parameter	Unit	Min.	Nor.	Max.	Design
	METEOROLOGICAL DATA.					
1	Barometric pressure	mbar abs	1008	1010	1011	
2	Ambient temperature□	C	5	34	45	
3	Relative humidity at ambient temperature	%			90 @ 42degc	
4	Rainfall data					
4.1	for 1-hour period	mm		Note-2		100 mm/hr
4.2	for 24-hours period	mm		Note-2		Note-2
4.3	Annual	mm		Note-2		Note-2
5	Wind data					
5.1	Wind velocity	km/hr		Note-3		Note-3

Notes
Notes:
1. Design Rate of change of barometric pressure: 15 mbar per hour.
2. Average Rainfall per year - 1000 mm. The main raining season in the south West monsoon from mid-June to September, which contributes about 92% of the average annual rainfall of 1000 mm. Rainy days per year with at least 2.5 mm - 45 days. Wettest month is July. The Design Rainfall is 100 mm /hr maximum.
3. The predominant wind direction is South West and is occurring during the period March to

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October. During this period, the winds are moderate to strong with wind speeds exceeding 35 km/h for about 15 days. The highest recorded wind speed so far is 60 km / h (17 m/s). From November to February, the wind direction changes and the predominant direction during this period is North East. Predominant wind speed: 44 km/h, South West (12m/s) along with its direction. 100 years maximum wind speed (1 minute average): 212 km/h (60 m/s). Wind Speed for tank design: 44 m/s. Formula for Calculation of Wind load: ANSI / ASCE 7-88/IS 875-1987. Exposure Category D Importance factor: 1. Flare Design: 26 m/s.

1.2.1.1 GENERAL PARAMETER

S.No.	Parameter	UOM	Design Value
1	Elevation above mean sea level	M	Mean sea level is +5.1 M CD. The site finished grade level is +12.5 M CD
2	Wind Direction		Refer Section 4.1

1.2.2 DATA FOR EQUIPMENT DESIGN

S.No.	Parameter	UOM	Design Value
1	Dry bulb temp.	Deg C	42
2	Wet Bulb Temp.	Deg C	29
3	Ambient Temp. for MDMT	Deg C	5.0
4	Air temp. for air cooled exchangers where followed by water cooling	Deg C	42
5	Air temp. for air cooled exchangers where not followed by water cooling	Deg C	42
6 (i)	Coincident Air temperature for corresponding relative humidity for GT"s	Deg C	NA
6 (ii)	Corresponding Relative humidity for GT"s	%	NA
7 (i)	Coincident temperature for corresponding relative humidity for Air Blower / Air Compressor	Deg C	42
7 (ii)	Corresponding Relative humidity for Air Blower/ Air compressor	%	90%
8	Earthquake Design criteria		Refer Attachment-I SITE SPECIFIC SEISMIC SPECTRA

2.0 UTILITY SPECIFICATION

2.1 UNIT RATES

S.No.	Utility	UOM	Rate	Rate Unit

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S.No.	Utility	UOM	Rate	Rate Unit
1	Power import	Kwh		
2	High Pressure steam import	MT		
3	Medium Pressure steam import	MT		
4	Low Pressure steam import	MT		
5	RLNG	Per MMBTU		
6	Re-circulating cooling water	M^3		
7	Boiler Feed Water	M^3		
8	Demineralised Water	M^3		
9	Nitrogen	NM^3		
10	Treated Raw Water	MT		

Notes
Note1: As advised by Owner Prices are not included in the above table.

2.2 UTILITY CONDITION AT BATTERY LIMIT

Utility pressure and temperature levels, as made available at battery limits of a process unit, as indicated below:

Utility conditions at unit B/L [All B/L pressures are as measured at grade for Petrochemiical Complex).

S.No.	Describe	Parameter	Min.	Nor.	Max.	Design	Remarks
1	HIGH PRESSURE STEAM (HP)						
		Pressure,KG/CM^{2}G	40	42	43	52 /FV	
		Temp.,DEG C	380	390	405	425	
2	MEDIUM PRESSURE (MP) STEAM						
		Pressure,KG/CM^{2}G	14	14.5	16	24 / FV	
		Temp.,DEG C	240	260	280	350	
3	LOW PRESSURE (LP) STEAM						
		Pressure,KG/CM^{2}G	3.5	4.0	4.5	10 / FV	
		Temp.,DEG C	SAT	160	185	250	
4	CONDENSATE RETURN(PURE & SUSPECT/SURFACE) AT PROCESS UNIT B/L						

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S.No.	Describe	Parameter	Min.	Nor.	Max.	Design	Remarks
		Pressure,KG/CM^{2}G	4.5/4.5	5.0/5.0		14/14	
		Temp.,DEG C		90/45-55		125/125	
5	SERVICE WATER (SW)						
		Pressure,KG/CM^{2}G	3	4.5	5	13	
		Temp.,DEG C		Amb		65	
6	RECIRCULATING COOLING WATER (Note-1)						
		Supply Pressure,KG/CM^{2}G		4.5		8.0	
		Return Pressure,KG/CM^{2}G	2.8				
		Supply temp. DEG C		33		65	
		Return temp. DEG C			45	65	
7	DEMINERALISED WATER						
		Pressure,KG/CM^{2}G		5.0		13.0	
		Temp.,DEG C		Amb		65	
8	BOILER FEED WATER (HP)						
		Pressure ,KG/CM^{2}G	58	59	60	85	
		Temp.,DEG C	110	120	120	150	
9	BOILER FEED WATER (MP)						
		Pressure ,KG/CM^{2}G	25(H)	26.5(H)	27.5(H)	44 (H)	
		Temp.,DEG C	120 (H)	120 (H)	135 (H)	150 (H)	
10	PLANT AIR						
		Pressure,KG/CM^{2}G	4.5	6.5	7.5	10.5	
		Temp.,DEG C		AMB		65	
11	INSTRUMENT AIR						

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S.No.	Describe	Parameter	Min.	Nor.	Max.	Design	Remarks
		Pressure,KG/CM^{2}G	4.5	6.5	7.0	10.5	
		Temp.,DEG C		AMB		65	
12	NITROGEN						
		Pressure,KG/CM^{2}G	5.0	6.0	6.5	10.5	
		Temp.,DEG C		AMB		65	
13	FUEL GAS (EXPORT)						
		Pressure,KG/CM^{2}G	4.5	5.0	6.0	10	
		Temp.,DEG C	30	40	40	120	
14	FUEL GAS (IMPORT)						
		Pressure,KG/CM^{2}G	3.5	4.0	5.0	10	
		Temp.,DEG C	30	40	40	120	
15	NATURAL GAS (Hold)						
		Pressure, KG/CM^{2}G (Hold)	3.5	4.0	5.0	9.0	
		Temp., DEG C		Amb.		65	
16	CHILLED WATER (HOLD)						
		Supply Pressure, KG/CM^{2}G (Hold)		4.5		8.0	
		Return Pressure, KG/CM^{2}G (HOLD)	2.8			8.0	
		Supply Temp., DEG C (HOLD)		5.0		65	
		Return Temp., DEG C (HOLD)		12		65	

Note-1: Cooling water pressure drop across water cooled exchangers or vendor package battery limits (i.e.; including package vendor lines, instruments, equipment, etc. pressure drops) shall not exceed 1.0 kg/cm2).

2. Licensor to note that the utilities listed above are available at unit B/L. In case any other utilities are required by the Licensor in the process , Licensor shall consider generation of the same within ISBL.

3. Licensor to note that export steam from unit should meet maximum steam conditions given in the above table.

4. Steam generation shall be floating on steam headers, i.e.; No pressure control shall be provided on steam generator, unless warranted from process reasons.

5. Operating and design parameter shall be updated based on final utility design basis.

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2.3 WATER QUALITY

The quality of filtered raw water (utility water) / Recirculating cooling water / Once-through cooling water/ DM Water / Boiler Feed Water are as follows;

S.No.	Parameter	User Defined	Raw water quality(Note-3)	Treated Raw Water(Note-4)	DM Water	Boiler Feed Water	Bearing Cooling Water (Note-2)	Recirculating Cooling water(Note-5)
	Temperature, deg C		Amb.					
1	pH		7.0-7.8	7.0-7.8	6.5-7.0	8.5-9.5		7.0-7.5
2	Turbidity, NTU		2.0	2.0	Nil	Nil		<5/10 (Note-7)
3	Total suspended solids, mg/l		20	2 Max.	Nil	Nil		<5/10 (Note-7)
4	Total dissolved solids, mg/l		200	200		0.5 (Max)		800/1000
5	Conductivity, micro S/cm		350	150-220	0.2 (Max) (Conductivity @ 20 deg. C, Micro-mho/cm)	<=1 (Note-1) (cationic conductivity @25 degC or ambient, micromho/cm		
6	M Alkalinity as CaCO3, mg/l							
7	Ca Hardness as CaCO3, mg/l		70	70				280/350
8	Total Hardness as CaCO3, mg/l		130	130				520/650

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S.No.	Parameter	User Defined	Raw water quality(Note-3)	Treated Raw Water(Note-4)	DM Water	Boiler Feed Water	Bearing Cooling Water (Note-2)	Recirculating Cooling water(Note-5)
9	Mg Hardness as CaCO3, mg/l		60	60				240/300
10	Reactive Silica as SiO2, mg/l		10	10	0.02 ppm (Max)	0.02 ppm (Max)		40/50
11	Colloidal Silica as SiO2, mg/l							
12	Total Silica as SiO2, mg/l				0.02ppm (Max)	0.02 ppm (Max)		
13	Potassium as K, mg/l							
14	Chlorides as Cl, mg/l		50	50	Nil			200/250
15	Sodium as Na, mg/l		60	60	0.01 ppm (Max)			240/300
16	Free residual chlorine, mg/l							
17	Sulphates as SO4, mg/l		15	15				760/975
18	Phosphates as PO4, mg/l							
19	Total Alkalinity as CaCO3, mg/l		200	200				100/120 (Note-6)
20	Nitrates as NO3, mg/l		0.74	0.74				2.96/3.7
21	Ammonical Nitrogen as NH4, mg/l		1.6	1.6				6.4/8
22	Dissolved oxygen, mg/l					0.005 ppm		
23	Total Iron as Fe, mg/l		0.1	0.1	0.03 ppm (Max)	0.03 ppm (Max)		0.4/0.5

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S.No.	Parameter	User Defined	Raw water quality(Note-3)	Treated Raw Water(Note-4)	DM Water	Boiler Feed Water	Bearing Cooling Water (Note-2)	Recirculating Cooling water(Note-5)
24	Dissolved Iron (as Fe), mg/l							
25	Total Copper as Cu, mg/l				0.003 ppm (Max)	0.003 ppm		
26	Lead as Pb, microgram/l							
27	Manganese as Mn, mg/l							
28	Zinc as Zn, mg/l							
29	Chromium as Cr, mg/l							
30	Polymeric dispersant, mg/l							
31	Zinc Sulphate as Zn, mg/l							
32	Benzotriazole, mg/l							
33	Oil content, mg/l				NIL			
34	KMnO4 value at 100 DEG C, mg/l				1 ppm (Max)	5 ppm (Max)		
35	ORP Value, mV							
36	Chemical oxygen demand, mg/l							
37	Sulfide as S, mg/l							
38	Azole (BZT), mg/l							
39	Fluoride as F, mg/l							

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S.No.	Parameter	User Defined	Raw water quality(Note-3)	Treated Raw Water(Note-4)	DM Water	Boiler Feed Water	Bearing Cooling Water (Note-2)	Recirculating Cooling water(Note-5)
40	Biochemical oxygen demand, mg/l							
41	Hydroxy Ethylidene Diphosphoric Acid (HEDP),mg/l							
42	SHMP, mg/l							
43	Polymeric Disperant, mg/l							
44	Corrosion rate (Mils/year)							<3/3

Note:
1. After addition of Carbohydrazide/Hydrazine and Morpholine.
2. Bearing cooling water quality is same as cooling water quality.
3. Quality of raw water provided above corresponds to water supplied by GIDC.
4. Based on the raw water quality reported, Treated raw water quality is provided.
5. Considering the quality of available make-up water and efficiency of the inhibitor treatment scheme, it is recommended that the cooling water system shall be operated at 4 COC.
6. Total alkalinity will find its own level depending upon pH maintained at 7.0-7.5. Total alkalinity as CaCo3 will be about 100-110ppm.
7. 10ppm is at the outlet of cooling water sump. SS filter shall be designed for the inlet value of 60ppm.

2.4 TYPICAL COOLING WATER PIPING AND INSTRUMENTATION AT HEAT EXCHANGERS

EIL recommends the connection as in 6.4.2.1 Backflush to be from supply header in case of exchangers located on 12 m and above while it shall be from the return header in case of exchanger at lower elevation. Backflush arrangement shall be provided for :

1	All cooling water consumers		YES
2	Only overhead condensers		NO
3	Cooling water consumers with water line sizes greater than	NB	NO

2.4.1

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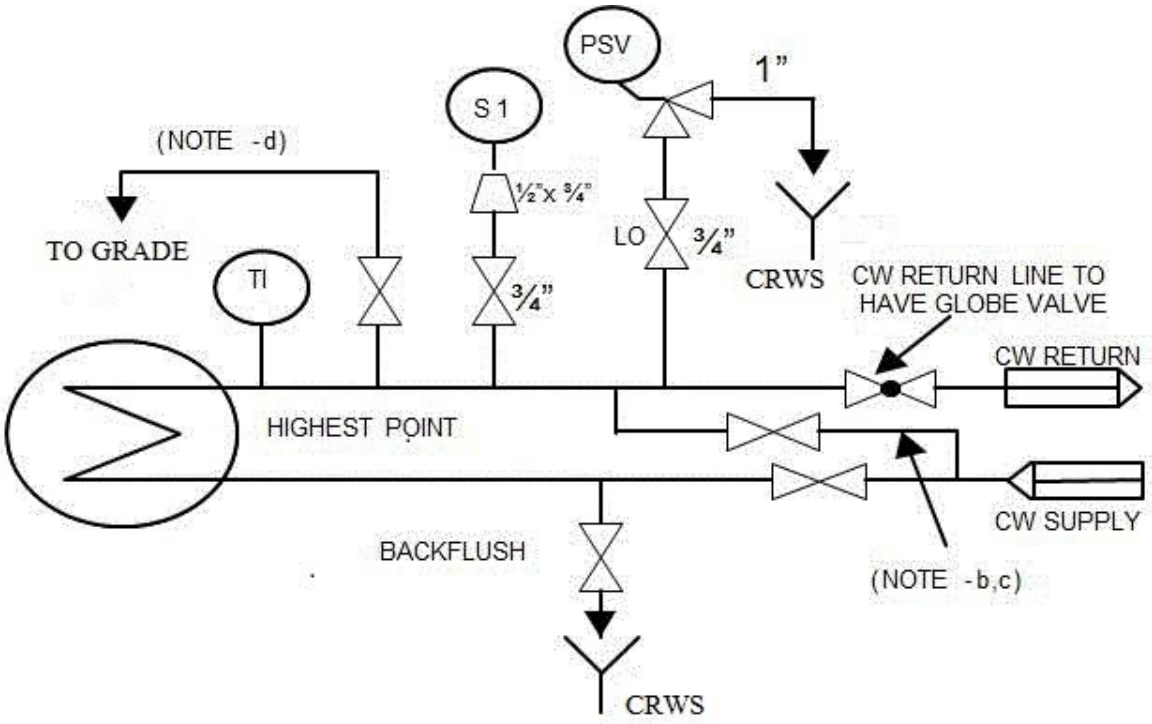

Note:
a) CW return line to have globe valve for cooling water.
b) Upto 6" CW line size, backflush line size will be the same. Above 6" CW line size, backflush line size will be one size lower than CW line size (maximum 10").For further higher cooling water line sizes, backflush line sizes shall be limited to maximum of 10".
c) This connection for back flushing is to be provided for all exchangers located at platform (12 m or above)
d) This routing facility will be applicable for exchangers at platform. 1″ Vent valve to be provided for all CW exchangers.
e) Butterfly valves are not preferred in cooling water exchanger inlet/outlet lines due to passing of the valves and this causes challenges during exchanger maintenance.
Thus it is proposed to consider Globe valve in the cooling water exchanger return line upto 16″ (as permitted by A91A PMS) . Rest all other cooling water exchanger inlet line valve and return line valve (beyond 16 size) shall be considered as Gate valve.

2.5 COMPRESSED AIR & NITROGEN SYSTEMS

2.5.1 PLANT AND INSTRUMENT AIR SPECIFICATION

The specifications of plant air and instrument air are indicated below:

S.No.	Parameter	Plant Air	Instrument Air
1	Dew Point at atmospheric pressure	Water free	(-) 40 deg C
2	Oil Content, ppm	NIL	NIL

2.5.2 INERT GAS SOURCE

FOR ETHANE/ PROPANE handling Facilities and Petrochemical Complex unit:

Nitrogen shall be generated from: New Cryogenic Air Separation Plant.

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Other considerations, if any:

1	Cryogenic Nitrogen Plant	YES
2	PSA Plant	NO
3	Nitrogen Cylinder	NO
4	Others	NO

2.5.3 INERT GAS SPECIFICATION

S.No.	Parameter	Inert Gas
1	Dew Point at atmospheric pressure	(-) 100 deg C
2	Oil Content, ppm	NIL
3	Nitrogen purity, vol%	99.99 min.
4	Oxygen content, vol ppm	<3
5	Carbon dioxide content, vol ppm	<1
6	Carbon monoxide content, vol ppm	traces
7	Noble Gas & Other Components, vol ppm	Balance

Unit and Offsite designers are required to indicate whether there is a requirement of prioritized continuous demand or intermittent large demand of Plant Air, Instrument Air or Inert Gas.

2.6 FUEL SYSTEMS

2.6.1 LIQUID FUEL SYSTEM

Liquid fuel by-product (C5+) generated within PDH unit will be used for firing in utility boiler. No liquid fuel shall be available from OSBL.

1	Liquid fuel system applies to the project.	YES
2	Existing liquid fuel system shall cater to the project	NO
3	One new single liquid fuel system for the total Project	NA
4	Two new liquid fuel systems for the total project	NA
4.1	Low sulfur fuel oil for	NA
4.2	Normal sulfur fuel oil for rest of units	NA

2.6.1.1 PROPERTIES

S.No.	Parameter	UOM	
1	Name		C5+ from PDH
2	RVP	Kg/cm2g	0.89
3	Sp Gr @15 DEG C		
4	Sulphur content	WT%	
5	Fixed Nitrogen content	wppm	
6	Nickel content	wppm	
7	Vanadium content	wppm	
8	Sodium content	wppm	
9	Copper content	wppm	
10	Iron content	wppm	
11	Calcium content	wppm	
12	Potassium content	wppm	

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S.No.	Parameter	UOM	
13	Flash Point	DEG C	
14	Pour Point(winter)	DEG C	
15	Pour Point(summer)	DEG C	
16	Kinematic Viscosity @ 50	cst	
17	Kinematic Viscosity @ 100	cst	
18	Kinematic Viscosity @ 135	cst	
19	Acidity, Total, Max	mg	
20	Methane	wt%	0.03
21	Ethylene	wt%	0.035
22	Ethane	wt%	0.63
23	Benzene	wt%	0.33
24	Toluene	wt%	2.88
25	P-Xylene	wt%	42.43
26	Heavies	wt%	4.49
27	Sec-Butylbenzene	wt%	0.01
28	M-Cymene	wt%	0.04
29	P-Cymene	wt%	0.028
30	1,2,4-Trimethylbenzene	wt%	0.063
31	M-Diethylbenzene	wt%	0.29
32	1-Methyl-3-N-Propylbenzene	wt%	1.42
33	1-Methyl-4-N-Propylbenzene	wt%	1.0
34	P-Diethylbenzene	wt%	0.36
35	N-Butylbenzene	wt%	0.35
36	5-Ethyl-M-Xylene	wt%	2.41
37	O-Diethylbenzene	wt%	0.2
38	1-Methyl-2-N-Propylbenzene	wt%	1.35
39	1,2,3-Trimethylbenzene	wt%	0.89
40	2-Ethyl-P-Xylene	wt%	3.36
41	4-Ethyl-O-Xylene	wt%	4.49
42	4-Ethyl-M-Xylene	wt%	8.41

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S.No.	Parameter	UOM	
43	Indane	wt%	0.61
44	3-Ethyl-O-Xylene	wt%	1.42
45	1,2,4,5-Tetramethylbenzene	wt%	3.33
46	1,2,3,5-Tetramethylbenzene	wt%	6.37
47	1,2,3,4-Tetramethylbenzene	wt%	2.33
48	1,2,3,4-Tetrahydronaphthalene	wt%	0.30
49	Naphthalene	wt%	2.89
50	N-Pentylbenzene	wt%	4.03
51	Trans-2-Phenylbutene-2	wt%	3.15
52	Conradson Carbon Residue	wt%	
53	Water Content	ppmw	
54	Net heating value	kcal/kg	
55	Mono/ Di/Tri/Poly/total aromatics	Vol%	
56	Aniline Point, deg C	Vol%	
57	Gross heating value	kcal/kg	

2.6.2 FUEL GAS SYSTEM

Fuel gas system for the PDH/PPU based Petrochemical Complex shall be one of the following.

1	Fuel gas system applies to the project.	YES
2	Existing fuel gas system shall cater to the project	NO
3	New fuel gas system for the total project integrated to existing facility.	NO
4	New fuel gas system for the total project independent of existing facility.	YES
5	Fuel gas backup	
5.1	Natural Gas shall be back-up for internal fuel gas	YES
5.2	Natural Gas consumers identified	NO
5.3	Fuel Gas consumers identified _.	NO
5.4	Individual units provided with independent Natural Gas backup .	NO
6	Natural gas shall be used for unit start ups.	YES

2.6.2.1 PROPERTIES

Fuel gas composition data are indicated as below:

S.No.	Parameter	UOM						
			Case-1; Normal(Note-a)	Case2; H2 rich fuel gas(Hold)(Note-d)	Startup-case ; RLNG(Note-c)			
1	H2	mol%	16.1					
2	CO2	mol%	0.0					

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S.No.	Parameter	UOM						
3	CO	mol%	0.0					
4	O2	mol%						
5(i)	H2S		100 ppmv		Max 4.0 ppmw			
5 (ii)	Total Sulphur (as S)				Max 10.0 ppmw			
6	H2O	mol%	0.4					
7	N2	mol%	0.0		0.6			
8	METHANE	mol%	25.9		90			
9	C2	mol%						
10	C3	mol%						
11	ETHYLENE	mol%	2.7					
12	ETHANE	mol%	36.7		6.24			
13	PROPENE	mol%	0.9					
14	PROPANE	mol%	2.2		2.19			
15	BUTENE	mol%	0.2					
16	n-BUTANE	mol%	6.9		0.39			
17	ISOBUTANE	mol%	5.6		0.58			
18 (a)	Cis-2-Butene	mol%	0.2					
18 (b)	Trans-2-butene	mol%	0.3					
18 (c)	Iso-butene	mol%	1.4					
19	i-PENTANE	mol%			0.01			
20	n-PENTANE	mol%			0.01			
21	ACETYLENE	mol%	0.0					
22	C6	mol%						
23	C6+	mol%						
24	C7	mol%						
25	C8	mol%						
26	LHV	Kcal / Kg						
27	AVG. MOL. WT	Kg/Kgmol	26.6		18.012			
28	Specific Gravity	kg/M3						
29	GCV	kcal/SCM						
30	NCV	kcal/SCM	11470 kcal/kg		11690 kcal/kg			

Note:
a. Fuel Gas produced from PDH unit shall be used internally for meeting the fuel demand of PDH heaters. Excess fuel gas will be exported to OSBL.
b. Excess fuel gas from PDH along with RLNG make up shall be used in utility boilers and flare purging.
c. For start-up RLNG shall be used.
d. Export of hydrogen-rich fuel gas from PDH is under review and its properties shall be reported post finalization.

2.6.3 BASIS OF DESIGN FOR FUEL GAS KOD / FUEL GAS LINES

Fuel gas liquid knockout drums and tracing for piping shall be:

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1	Separate KOD for each process unit.	YES	
2	Common KOD for a group of functionally clustered units, as indicated under common facilities.	NO	
3	Fuel gas lines shall always be steam traced from ISBL KOD upto individual furnaces	YES	
4	Fuel gas lines will be steam-traced from source upto ISBL KOD	NO	
5	Fuel Gas lines in OSBL willbe electric traced.	NO	
6	Fuel gas lines in OSBL will be steam traced.	NO	
7	PDT across Fuel Gas strainer in fuel gas lines to be provided	YES	
8	A dedicated FG KOD to be provided for flare in the flare area	YES	
9	KOD drain should be routed to closed system	YES	Yes unless in the area where no closed drain available e.g; flare area. There it will be routed to flare/ OWS.

2.6.4 BASIS OF DESIGN FOR FUEL OIL HEATING SYSTEM

In line strainers are recommended in burner piping within each unit. These shall be located not more than 20 meters upstream of the burner manifold and shall be 1-online + 1 spare strainer with mesh sizes 100 for Fuel oil/ liquid fuel, 200 for Fuel gas and 200 for atomizing steam. All mesh sizes are Tyler standard.

2.7 FLARE BACK PRESSURE

Maximum flare backpressure shall be considered for sizing of pressure relief devices:

S.No.	Flare system	Superimposed backpressure(kg/cm²g)	Built-up back pres. at unit battery limits(kg/cm²)	Built-up back pres. at PSV outlet(kg/cm²g)
1	HC FLARE (LP FLARE)	0.1	1.5	1.7
2	HC FLARE(LLP FLARE)	N.A	0.07 (At PCV O/L)	N.A
3	ACID GAS FLARE (Not Applicable)	0.1	0.5	0.7

Note-1. Build-up back pressure provided is total buildup back pressure.
Note-2. Total buildup back pressure at unit battery limit provided is in kg/cm2g.

2.8 BASIS OF PSV OVERPRESSURE

Overpressure (as percentage of set pressure) for sizing relief valves shall be:

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S.No.	Contingency	Condition-1	Condition-2
1	Steam generating equipment	5% (As per IBR)	5% (As per IBR)
2	Fire case	21%	As per Designer
3	Thermal relief (piping / equipment)	25% / 10%	As per Designer
4	Operational failures	10%	As per Designer

Legend :
Condition-1: Low pressures < 70 kg/cm^{2}g
Condition-2: High pressures >= 70 kg/cm^{2}g

2.9 ELECTRICAL SYSTEMS - SYSTEM DESIGN

Voltage levels are: (table indicates default values; owner may indicate if otherwise)

S.No.	Type Of Load	Power	Supply	Frequency	Phase	Voltage
1	Lighting		AC	50Hz +/- 3%	1	240V +/- 10%
2	Instrumentation Power supply		AC/ DC	50Hz +/- 3%	1	110V AC / 24V DC +/-10%
3	UPS		AC	50Hz +/- 3%	1	110V/ 240 V
4	Motor					
4.1		P<0.18 kW	AC	50Hz +/- 3%	1	240 V+/- 10%
4.2		0.18 kW <= P <= 160 kW	AC	50Hz +/- 3%	3	415 V+/- 10%
4.3		>160 kW	AC	50Hz +/- 3%	3	6600 V+/- 10%

Note-1: HV motor (motor above 160KW); MV motor (Motors upto 160KW).
Note-2: Input power supply for VFD not having bypass up to 315kW shall be 415V AC and power supply for
VFD above 315kW shall be 6.6kV. However, power supply for VFDs with bypass up to 160kW shall be
415V and 6.6kV above 160kW.

3.0 DESIGN PHILOSOPHY

3.1 MINIMUM METALLURGY FOR WATER COOLED EXCHANGER

For cooling mediums for heat exchangers, metallurgy can be selected for either long tube life at a higher initial cost or for shorter tube life at a lower initial cost with up gradations being decided in the course of operating the plant. In specific cases superior metallurgy is dictated by considerations such as sea water cooling, compatibility with NACE MR-01-75 etc. and shall be as per designer. The minimum metallurgy preferred by owner are:

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Type of service	Shell	Tube	Channel	Channel cover	Tube sheet	Remarks
Recirculating cooling water (with Treated Raw water makeup) (Note-4)	Note-3	Super Duplex SS (SDSS 2507)	KCS +4.5mm CA+ CP+ Internal Painting	KCS +4.5mm CA+ CP+ Internal Painting	SDSS Clad KCS (Cladding on channel side)	
Console Lube Oil Cooler (Note-4)	Note-3	Super Duplex SS (SDSS 2507)	KCS +4.5mm CA+ CP+ Internal Painting	KCS +4.5mm CA+ CP+ Internal Painting	SDSS Clad KCS (Cladding on channel side)	

Note 1: Exception if any, due to process reason, should be specified.
Note 2: If Carbon steel is specified on tube side for recirculating cooling water service, the minimum material of construction for CONSOLE LUBE OIL COOLERS shall be as per respective governing API Codes of main equipment.
Note 3: In case cooling water is in the shell side, unit designer philosophy with respect to material of construction shall be followed.
Note 4: Based on the cooling water quality derived from the incoming GIDC raw water specification, recommended MOC for CW exchanger tubes is SDSS. However, this is being reviewed and shall be confirmed subsequently.

3.2 CORROSION ALLOWANCE REQUIREMENT

Minimum corrosion allowances shall be as follows. These are applicable to an equipment in general, unless licensor's proprietary design requirement calls for higher value.

Service	EIL Default	Owner Value
Carbon Steel pressure vessels	3.0 mm	
Carbon Steel atmospheric vessels	3.0 mm	
Alloy Steel vessels	1.5 mm	
Stainless Steel vessels	Nil	
Clad / Lined vessels	3.0 mm clad thick	
Carbon Steel/LAS exchangers	3.0 mm	
SS/HAS/Non Ferrous exchangers	Nil	
LINED VSSELS (rubber lined etc)	3.0 mm + lining	
Carbon steel storage tank bottom most shell course and bottom plate	3.0 mm	
Carbon steel storage tank shell other courses	1.5 mm	
CS buried vessels (external corrosion)	1.5 mm	
CS spheres	1.5 mm	

3.3 FOULING FACTOR FOR UTILITY STREAMS

The following default fouling factors (As Min.) for utility streams shall be used.

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Note- In case of Plate & Frame exchanger, fouling factor for cooling water shall be decided by designer.

Utility Stream	EIL Default	Owner Preference
Cooling Water	0.0004 hr-m ^{2} -DEG C/kcal For Shell & tube Type	
DM water	0.0001 hr-m ^{2} -DEG C/kcal	
Tempered Water	0.0002 hr-m ^{2} -DEG C/kcal	
Condensate	0.0001 hr-m ^{2} -DEG C/kcal	
Steam	0.0001 hr-m ^{2} -DEG C/kcal	
Nitrogen	0.0001 hr-m ^{2} -DEG C/kcal	
Air	0.0001 hr-m ^{2} -DEG C/kcal	

3.4 VELOCITY CONSTRAINTS

EIL recommends that constraints be specified for tube side velocities for better on-stream factors of heat exchangers / air coolers, as applicable in fouling services.
Cooling water flow rates are normally not expected to be turned down during operation and can be designed for a velocity constraint applied only for normal flow.
Residue and heavy oil services would have flow rates turned up or turned down during operation and need to be designed for a velocity range that will ensure low fouling regime.

For slurry oils such as catalytic cracker bottoms, such a velocity range has to ensure that solids do not settle out in the tubes while ensuring that this will not result in erosion of tubes.

Respective unit Licensor's / designers shall be required to specify velocity ranges as part of heat exchanger specifications.

EIL default values are as follows:

For critical coolers and condensers, tube inserts may be considered.

Service	Minimum (m/sec)	Maximum (m/sec)
Cooling water	1.0 @ normal flow	As per designer
Residues, Heavy oils	As per designer	As per designer
Slurry oils	1.3 @ turndown	As per designer

3.5 ENVIRONMENTAL CONTROL

1 Low NOx burners shall be used in all furnaces.
2 Continual online monitors for SO2, NOx, CO and SPM in the stacks shall be provided.
3 Emission from the stacks shall be as per the standard stipulated by MoEFCC Notification dated 9th November 2012 for Petrochemical Industry and other CPCB/SPCB regulations.
4 Emissions from the project shall be in compliance with the National Ambient Air Quality Standard 2009.
5 The Effluent discharged from the PDH-PP complex shall conform to Petrochemical Industry Standards as mentioned in EPA 1986 and its amendments.
6 All unit Licensor/Designers have to necessarily provide complete effluent characteristics as defined in section 15.1 and the same shall be furnished in the format as detailed in 15.1.1, 15.1.2 and 15.1.3

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7 Noise level :
85 dB(A) at 1 meter from source.

75 dB(A) daytime and 70 dB(A)night time at the boundary wall

8 The Handling and Disposal of hazardous waste generated in the project shall be in compliance with Hazardous and Other Waste Management Rules, 2016

9 Emission norms as stipulated by MoEFCC/CPCB and other mandatory regulation shall be satisfied for the project.

10 Total Sulphur dioxide emission from complex through vents/ stacks shall be maximum of 50 mg/Nm3 and 850 mg/Nm3 and For NOx, the emission will be 250 mg/Nm3 and 350 mg/Nm3 for gas and liquid fuel operated Furnace, boiler, Heater, Vaporiser, Captive Power Plant respectively as per prescribed Refinery and Petrochemical standards of MoEFCC.

11 Total Sulphur dioxide emission from complex shall be as per environmental clearance letter issued from Ministry of Environment, Forest and Climate Change (MoEFCC): 0.19 TPD.

12 Continuous online (24x7) monitoring system, both for emissions and effluent shall be installed within the plant site for measurement of discharge and pollutants concentration.

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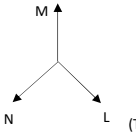
TEMPLATE FOR VENDOR INTERFACE DATA (CONNECTION DETAILS)

PROJECT NAME & JOB NO:	*(Vendor to fill)*
PACKAGE / EQUIPMENT TAG NO:	*(Vendor to fill)*
PR NO:	*(Vendor to fill)*
DOCUMENT NO:	*(Vendor to fill)*

SL NO	NOZZLE / TP NO	DESCRIPTION	NOZZLE SIZE (IN)	RATING / SCH (THK)	END CONNECTION TYPE / DESCRIPTION	END CONNECTION DIMENSION STANDARD	NOZZLE / TP POINT CO-ORDINATES (NOTE - 1) (MM)			ORIENTATION OF NOZZLE FACE (+L / -L / +M / -M / +N /-N)	REMARKS
							L	M	N		



(TYPICAL)

CO-ORDINATE SYSTEM FOR NOZZLE FACE (NOTE - 2)

Notes:

1. ALL DIMENSIONS ARE IN MM. COORDINATES SHALL BE FROM DATUM POINT TO FACE OF RESPECTIVE NOZZLE. DATUM POINT (0, 0, 0) TO BE MARKED IN GAD.
2. CO-ORDINATES SHALL BE READ IN CONJUNCTION WITH VENDOR GENERAL ARRANGEMENT DRAWING NO. _____ *(Vendor to fill GA Drawing No.)*
3. ALL TIE-IN POINTS WHICH REQUIRE PURCHASER INTERFACE ARE TO BE LISTED.
4. VENDOR TO SUBMIT PURCHASER INTERFACE NOZZLE / TP DETAILS TABLE INLINE TO THIS FORMAT IN THEIR GAD.

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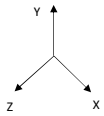
TEMPLATE FOR VENDOR INTERFACE DATA (ALLOWABLE LOADS AND THERMAL DISPLACEMENT)

Sht. 2 of 2

PROJECT NAME & JOB NO:	*(Vendor to fill)*
PACKAGE / EQUIPMENT TAG NO:	*(Vendor to fill)*
PR NO:	*(Vendor to fill)*
DOCUMENT NO:	*(Vendor to fill)*

SL NO	NOZZLE / TP NO	DESCRIPTION	NOZZLE SIZE (IN)	RATING / SCH (THK)	MAX. ALLOWABLE FORCES AT TIE-IN POINT (NOTE - 5)			MAX. ALLOWABLE MOMENTS AT TIE-IN POINT (NOTE - 5)			DISPLACEMENT AT *OPERATING* TEMPERATURE (NOTE-7) AT TIE-IN POINT			DISPLACEMENT AT *DESIGN* (NOTE-7) TEMPERATURE AT TIE-IN POINT			DISPLACEMENT AT *ANY OTHER (NOTE-3,7)* TEMPERATURE AT TIE-IN POINT		
					FX (KG)	FY (KG)	FZ (KG)	MX (KG-M)	MY (KG-M)	MZ (KG-M)	DX (MM)	DY (MM)	DZ (MM)	DX (MM)	DY (MM)	DZ (MM)	DX (MM)	DY (MM)	DZ (MM)



(TYPICAL)
CO-ORDINATE SYSTEM FOR NOZZLE FACE (NOTE - 2)

APPLICABLE TEMPERATURE CONDITIONS IN DEGREE C: OPERATING (_____), DESIGN (_____), ANY OTHER (NOTE-3) (_____). *(Vendor to fill)*

Notes:

1. ALL DIMENSIONS ARE IN MM
2. CO-ORDINATES SHALL BE READ IN CONJUNCTION WITH VENDOR GENERAL ARRANGEMENT DRAWING NO. _____ *(Vendor to fill GA Drawing No.)*
3. ANY OTHER CONDITIONS (IF ANY) LIKE START-UP, UPSET ETC. WHICHEVER APPLICABLE.
4. FOR PACKAGES, 3D ANCHOR SUPPORT DETAIL DRAWING (IF APPLICABLE AS PER BATTERY LIMIT INTERFACE DRAWING) TO BE PROVIDED BY VENDOR. 3D ANCHOR SUPPORT IMPLIES SUPPORT RESTRAINED IN 3 PERPENDICULAR DIRECTIONS, WITH GUIDE GAP = 0 MM IN ALL DIRECTION.
5. IN CASE OF CENTRIFUGAL COMPRESSOR & STEAM TURBINES, WHERE NOZZLE LOAD CHECKING IS AS PER API 617 / NEMA SM23, ALLOWABLE NOZZLE LOADS SHALL BE AS PER SCOPE OF WORK DOCUMENT IN MR.
6. VENDOR TO SUBMIT PURCHASER INTERFACE NOZZLE LOADS AND DISPLACEMENT TABLE INLINE TO THIS FORMAT IN THEIR GAD.
7. VENDOR TO PROVIDE THERMAL DISPLACEMENTS WITH RESPECT TO AMBIENT TEMPERATURE AS SPECIFIED IN MR, WHICH IS _____ *(Vendor to fill)*

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PROJECT	PDH PP PLANT WITH ETHANE AND PROPANE HANDLING F/	**CLIENT**	PETRONET LNG LIMITED (PLL)
UNIT	Propane Dehydrogenation Unit	**JOB NO.** B862	**UNIT NO.** 101

ITEM NO.			101-PA-0006
DESIGN CASE			--
SERVICE			METHANOL UNLOADING PUMP
PARALLEL OPERATION			NO
OPERATION			INTERMITTENT
OPERATING			1
STAND BY			0
TYPE OF PUMP			CENTRIFUGAL
PROPERTIES OF LIQUID			
LIQUID HANDLED			METHANOL
PUMPING TEMPERATURE		deg C	AMBIENT
VISCOSITY AT PUMPING TEMPERATURE		CP	0.5
VAPOUR PRESSURE AT PUMPING TEMPERATURE		KG/CM2 A	0.4
LIQUID DENSITY AT PUMPING TEMPERATURE		KG/M3	774
PRESENCE OF CORROSIVE / TOXIC COMPONENTS			NO
SOLIDS IN SUSPENSION			
POUR POINT (FOR CONGEALING SERVICE)		deg C	
OPERATING CONDITIONS FOR ONE PUMP			
FLOW RATE	NORMAL	KG/HR	
	MAXIMUM	M3/HR	5
	MINIMUM	KG/HR	
SUCTION PRESSURE		KG/CM2 A	0.8
DISCHARGE PRESSURE		KG/CM2 A	3
DIFFERENTIAL PRESSURE		KG/CM2	2.2
DIFFERENTIAL HEAD		m	27.8
NPSH AVAILABLE		m	5.7
CAPACITY CONTROL FOR VOLUMETRIC PUMPS			
METHOD OF CONTROL			
TYPE OF CONTROL			
CONTROL RANGE			
PRECISION AT MINIMUM RATE			
MECHANICAL DATA			
DESIGN PRESSURE		KG/CM2 G	3.5
MAXIMUM SUCTION PRESSURE		KG/CM2 A	1.3
DESIGN TEMPERATURE		deg C	65
MATERIAL OF CONSTRUCTION			
	CASING		KCS + SR(HARDNESS OF WELD AND HAZ SHALL BE 200 E
	IMPELLER / PISTON / PLUNGER		KCS + SR(HARDNESS OF WELD AND HAZ SHALL BE 200 E
LINE RATING			
	SUCTION		150
	DISCHARGE		150
SEAL TYPE			PRESSURIZED DOUBLE MECHANICAL SEAL
DRIVER TYPE			ELECTRIC MOTOR
STEAM TURBINE DATA			
INLET PRESSURE	(MIN./NOR./MAX./DES.)	BAR	
INLET TEMPERATURE	(MIN./NOR./MAX./DES.)	deg C	
EXHAUST PRESSURE	(MIN./NOR./MAX./DES.)	BAR	
LINE RATING			
	INLET		
	OUTLET		
SAFETY VALVE REQUIRED ON STEAM TURBINE EXHAUST			--
MOTOR DATA			
VARIABLE SPEED MOTOR REQUIRED			NO
AUTO START/STOP OF PUMP REQUIRED			NO
REACCELERATION REQUIRED			NO
PUMP CONNECTED TO EMERGENCY POWER/STEAM SUPPLY			NO

Rev. No.	Date	Purpose	Prepared By	Reviewed By	Approved By
0	05-FEB-2026	Issued For Engineering	SK	SUNIL	SUBHOSREE
A	18-DEC-2025	Issued For Comments	SK	SUNIL	SUNIL

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PROJECT	PDH PP PLANT WITH ETHANE AND PROPANE HANDLING F/	**CLIENT**	PETRONET LNG LIMITED (PLL)
UNIT	Propane Dehydrogenation Unit	**JOB NO.**	B862
UNIT NO.	101		

NOTES:

1	REFER P&ID B862-79-41-101-11055.
2	THIS PUMP IS USED TO UNLOAD METHANOL FROM TANKER TO METHANOL STORAGE DRUM (101-VV-0007).
3	NPSHA IS CONSIDERING PUMP CENTRELINE AT 1M AND TANK OUTLET TO PUMP AT 1.5 M.
4	TANKER HEIGHT IS CONSIDERED AS 3000 MM FOR MAXIMUM SUCTION PRESSURE AND PUMP SHUTOFF CALCULATION.
5	PUMP VENDOR TO ENSURE THAT PUMP SHUTOFF PRESSURE DOES NOT EXCEED 3.5 KG/CM2 G.
6	THE IMPELLER MOC SHALL BE KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BHN MAX). SS304L / SS316L are also acceptable as impeller MOC.
7	THE CASING MOC SHALL BE KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BHN MAX).

Rev. No.	Date	Purpose	Prepared By	Reviewed By	Approved By
0	05-FEB-2026	Issued For Engineering	SK	SUNIL	SUBHOSREE
A	18-DEC-2025	Issued For Comments	SK	SUNIL	SUNIL

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PROJECT	PDH PP PLANT WITH ETHANE AND PROPANE HANDLING F/	**CLIENT**	PETRONET LNG LIMITED (PLL)
UNIT	Propane Dehydrogenation Unit	**JOB NO.** B862	**UNIT NO.** 101

ITEM NO.			101-PA-0007
DESIGN CASE			--
SERVICE			METHANOL PUMP
PARALLEL OPERATION			NO
OPERATION			INTERMITTENT
OPERATING			1
STAND BY			0
TYPE OF PUMP			CENTRIFUGAL
PROPERTIES OF LIQUID			
LIQUID HANDLED			METHANOL
PUMPING TEMPERATURE		deg C	AMBIENT
VISCOSITY AT PUMPING TEMPERATURE		CP	0.5
VAPOUR PRESSURE AT PUMPING TEMPERATURE		KG/CM2 A	0.4
LIQUID DENSITY AT PUMPING TEMPERATURE		KG/M3	774
PRESENCE OF CORROSIVE / TOXIC COMPONENTS			NO
SOLIDS IN SUSPENSION			
POUR POINT (FOR CONGEALING SERVICE)		deg C	
OPERATING CONDITIONS FOR ONE PUMP			
FLOW RATE	NORMAL	KG/HR	
	MAXIMUM	M3/HR	5 M3/HR + MCF
	MINIMUM	KG/HR	
SUCTION PRESSURE		KG/CM2 A	0.9
DISCHARGE PRESSURE		KG/CM2 A	19.2
DIFFERENTIAL PRESSURE		KG/CM2	18.3
DIFFERENTIAL HEAD		m	236.4
NPSH AVAILABLE		m	6.6
CAPACITY CONTROL FOR VOLUMETRIC PUMPS			
METHOD OF CONTROL			
TYPE OF CONTROL			
CONTROL RANGE			
PRECISION AT MINIMUM RATE			
MECHANICAL DATA			
DESIGN PRESSURE		KG/CM2 G	27
MAXIMUM SUCTION PRESSURE		KG/CM2 A	4.88
DESIGN TEMPERATURE		deg C	65
MATERIAL OF CONSTRUCTION			
	CASING		KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BH
	IMPELLER / PISTON / PLUNGER		KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BH
LINE RATING			
	SUCTION		150
	DISCHARGE		300
SEAL TYPE			PRESSURIZED DOUBLE MECHANICAL SEAL
DRIVER TYPE			ELECTRIC MOTOR
STEAM TURBINE DATA			
INLET PRESSURE	(MIN./NOR./MAX./DES.)	BAR	
INLET TEMPERATURE	(MIN./NOR./MAX./DES.)	deg C	
EXHAUST PRESSURE	(MIN./NOR./MAX./DES.)	BAR	
LINE RATING			
	INLET		
	OUTLET		
SAFETY VALVE REQUIRED ON STEAM TURBINE EXHAUST			--
MOTOR DATA			
VARIABLE SPEED MOTOR REQUIRED			NO
AUTO START/STOP OF PUMP REQUIRED			NO
REACCELERATION REQUIRED			NO
PUMP CONNECTED TO EMERGENCY POWER/STEAM SUPPLY			NO

Rev. No.	Date	Purpose	Prepared By	Reviewed By	Approved By
0	05-FEB-2026	Issued For Engineering	SK	SUNIL	SUBHOSREE
A	18-DEC-2025	Issued For Comments	SK	SUNIL	SUNIL

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PROJECT	PDH PP PLANT WITH ETHANE AND PROPANE HANDLING F/	**CLIENT**	PETRONET LNG LIMITED (PLL)		
UNIT	Propane Dehydrogenation Unit	**JOB NO.**	B862	**UNIT NO.**	101

NOTES:

1	REFER P&ID B862-79-41-101-11056.
2	NPSHA IS CONSIDERING PUMP CENTRELINE AT 1M AND METHANOL STORAG DRUM BTL AT AT 1.5 M.
3	PUMP MINIMUM CONTINOUS FLOW TO BE PROVIDED BY VENDOR.
4	THE IMPELLER MOC SHALL BE KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BHN MAX). SS304L / SS316L are also acceptable as impeller MOC.
5	THE CASING MOC SHALL BE KCS+SR(HARDNESS OF WELD AND HAZ SHALL BE 200 BHN MAX).

Rev. No.	Date	Purpose	Prepared By	Reviewed By	Approved By
0	05-FEB-2026	Issued For Engineering	SK	SUNIL	SUBHOSREE
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इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम) ENGINEERS INDIA LIMITED (A Govt. of India Undertaking)

PUMP
PROCESS DATA SHEET

Document No. B862-102-17-43-DS-1601
Rev. No. 0

PROJECT	PDH-PP AT PLL DAHEJ COMPLEX	CLIENT	M/S PETRONET LNG LIMITED
UNIT	FIRE WATER SYSTEM	JOB NO.	B862 UNIT NO. 102
ITEM NO.	102-PA-7001 A/B	SERVICE	FIRE WATER BOOSTER PUMP (PP UNIT)
OPERATING	1 STANDBY 1	TYPE OF PUMP	HORIZONTAL CENTRIFUGAL

PROPERTIES OF LIQUID			
LIQUID HANDLED			FIRE WATER (FRESH WATER)
PUMPING TEMPERATURE		DEG C	AMBIENT
VISCOSITY AT PUMPING TEMPERATURE		CP	1
VAPOUR PRESSURE AT PUMPING TEMPERATURE		KG/CM2 A	0.08
LIQUID DENSITY AT PUMPING TEMPERATURE		KG/M3	996
PRESENCE OF CORROSIVE / TOXIC COMPONENTS			NO
SOLIDS IN SUSPENSION			NO
POUR POINT (FOR CONGEALING SERVICE)		DEG C	NA
OPERATING CONDITIONS FOR ONE PUMP			
FLOW RATE	NORMAL	M3/HR	
	MAXIMUM	M3/HR	250
	MINIMUM	M3/HR	NOTE-2
SUCTION PRESSURE		KG/CM2 A	13
DISCHARGE PRESSURE		KG/CM2 A	21
DIFFERENTIAL PRESSURE		KG/CM2	8
DIFFERENTIAL HEAD		METERS	80.3
NPSH AVAILABLE		METERS	>10M
CAPACITY CONTROL FOR VOLUMETRIC PUMPS			
METHOD OF CONTROL			
TYPE OF CONTROL			
CONTROL RANGE			
PRECISION AT MINIMUM RATE			
MECHANICAL DATA			
DESIGN PRESSURE		KG/CM2 G	28.5
MAXIMUM SUCTION PRESSURE		KG/CM2 G	18.9
DESIGN TEMPERATURE		DEG C	65
MATERIAL OF CONSTRUCTION			
CASING			CAST STEEL
IMPELLER/ PISTON/ PLUNGER			SS410/SS316
SEAL TYPE			MECHANICAL SEAL
LINE RATING			
SUCTION			300#
DISCHARGE			300#
DRIVER TYPE			ELECTRIC MOTOR
STEAM TURBINE DATA			NA
INLET PRESSURE	(MIN./NOR./MAX.)	KG/CM2 G	
INLET TEMPERATURE	(MIN./NOR./MAX.)	DEG C	
DESIGN PRESSURE		KG/CM2 G	
DESIGN TEMPERATURE		DEG C	
EXHAUST PRESSURE	(MIN./NOR./MAX.)	KG/CM2 G	
LINE RATING			
INLET			
OUTLET			

NOTES:

1. THE PUMP SHALL BE SUPPLIED WITH DRIVE.
2. MINIMUM FLOW VALUE TO BE FURNISHED BY PUMP VENDOR.
3. PUMP SHALL BE CAPABLE OF FURNISHING NOT LESS THAN 150% OF RATED CAPACITY AT A HEAD NOT LESS THAN 65% OF RATED HEAD.

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0	02.04.2026	ISSUED FOR ENGINEERING	SG	VI/BR	DK
A	13.03.2026	ISSUED FOR COMMENTS	SG	VI/BR	DK

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PROJECT	PDH-PP AT PLL DAHEJ COMPLEX	CLIENT	M/S PETRONET LNG LIMITED
UNIT	FIRE WATER SYSTEM	JOB NO.	B862
UNIT NO.	102		
ITEM NO.	102-PA-7001 A/B	SERVICE	FIRE WATER BOOSTER PUMP (PP UNIT)

NOTES:

4. SHUT OFF HEAD SHALL NOT EXCEED 120% OF RATED HEAD.
5. PUMP MOTOR SHALL BE SUITABLE FOR STARTING AGAINST FULLY OPEN DISCHARGE VALVE.
6. THE POWER SUPPLY TO THE ELECTRIC MOTOR DRIVEN PUMPS SHOULD BE DISTRIBUTED FROM A SWITCHBOARD HAVING TWO SEPARATE INCOMERS SUCH THAT FAILURE OF ANY ONE INCOMER SOURCE DOES NOT DISRUPT THE POWER SUPPLY TO ALL THE ELECTRIC MOTOR DRIVEN PUMPS.
7. PUMP SHALL HAVE AUTOSTART FACILITY ALSO AND SHALL BE STOPPED MANUALLY FROM FIELD
8. REFER PUMPING P&ID No. B862-102-17-43-11111 FOR MORE DETAILS
9. PUMP & ITS DRIVE TO COMPLY WITH REQUIREMENTS OF NFPA 20/API .
10. PUMP CENTRELINE ELEVATION, AS DATUM, IS ASSUMED TO BE 1.4 M FROM FINISHED FLOOR LEVEL FOR NPSH CALCULATIONS

Rev. No	Date	Purpose	Prepared By	Reviewed By	Approved By
0	02.04.2026	ISSUED FOR ENGINEERING	SG	VI/BR	DK
A	13.03.2026	ISSUED FOR COMMENTS	SG	VI/BR	DK

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JOB SPECIFICATION

(ELECTRICAL)

HORIZONTAL CENTRIFUGAL PUMPS

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
UNIT/UNIT NO.	:	**PROPANE DEHYDROGENATION UNIT (PDH) / 101**
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
C	09.04.2026	REVISED & ISSUED WITH MR	MS	PK	SA
B	18.02.2026	REVISED & ISSUED WITH MR	MS	PK	SA
A	07.01.2026	ISSUED WITH MR	MS	PK	SA

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1.0 GENERAL

1.1 The specification defines the basic requirements of the electrical works in vendor's scope for Horizontal Centrifugal Pumps for PDH-PP Project of M/s PLL. This job specification shall be read in conjunction with EIL standard specifications, data sheets and documents attached or referred with the Material Requisition. In case of any conflict amongst various documents enclosed with MR, the most stringent requirement shall govern and Owner/EIL decision in this regards shall be final.

1.2 The equipment shall conform to this specification, enclosed data sheets and standard specifications.

2.0 SITE CONDITIONS

The equipment and the installation shall be suitable for continuous operation under the following site conditions:

Maximum Temperature	:	45 °C
Minimum Temperature	:	10 °C
Equipment Design Temperature	:	45 °C
Relative Humidity	:	90%
Altitude above MSL	:	< 1000m
Environment	:	Dusty, Tropical & Corrosive as in Hydrocarbon Industry

3.0 UTILIZATION VOLTAGE

Utilization voltage for motors, anti-condensation heaters, etc. shall be based on their ratings, as listed below:

a.)	MV Motors (0.18≤KW ≤160)	:	415V ± 6%
b.)	Motors rated < 0.18 KW	:	240V AC ± 10%
c.)	Anti-condensation heaters	:	240V ± 10%
d.)	Frequency	:	50Hz ± 3%

4.0 AREA CLASSIFICATION AND EQUIPMENT SELECTION

4.1 The Area classifications for various Electrical equipment shall be considered as Zone-2, IIA / IIB, Temp. Class T3.

4.2 The minimum enclosure protection for equipment in classified area zone 2 shall be as follows:

Equipment	Type of enclosure protection
MV Motors	Ex-n / Ex-ec*
Junction Box	Ex 'd'

* Ex-ec motors as per latest IS/IEC-60079-7 shall be acceptable subject to availability of statutory approvals.

4.3 102-PA-7001 A/B (Fire water Booster Pump) shall be suitable for safe area.

4.4 Motors shall have minimum enclosure protection Ex–n/ Ex-ec and shall meet the requirements of IS/ IEC-60079-15 (for Ex-n) and IS/IEC 60079-7 (Ex-eC).

4.5 Flameproof Equipments Ex d shall meet the requirements of latest revision of IS/IEC 60079-1.

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5.0 SPECIFIC REQUIREMENTS FOR MOTORS

5.1 Motors shall fulfill the following requirements

a. MV motors (<1100V) shall be as per EIL specification 6-51-0064 and datasheet (B862-000-16-50-DS-3201) for MV Motor enclosed.

5.2 Variation / Clarifications against the standard specification of MV Motor 6-51-0064, shall be as per the MOU agreed with EIL by respective motor manufacturer. No further deviations to standard requirements shall be entertained.

5.3 All MV motors shall be IE3 type conforming to requirements of EIL specification 6-51-0064 and all operating parameters such as starting current, efficiency for all IE3 MV motors shall be in line with latest IS 12615.

5.4 The rated efficiency and the IE code shall be durably marked on the rating plate, for example “IE3– 94.0 %”. Requirement of Gazette of India for IE-3 motors shall be duly complied as applicable.

5.5 All MV motors shall be provided with spreader box for smooth termination of power cables in the motor.

5.6 Recommended range for the starting power factor of the DOL start motors shall be in range of 0.2 to 0.3.

5.7 Space heater shall be provided for motors rated 30 kW and above.

5.8 All opening in the motor terminal boxes shall be supplied with weatherproof (min. IP 55) blanking plugs so that the motor is transported with sealed terminal boxes. The cable entries of all terminal boxes of motors, before dispatch from motor manufacturer works, shall be fitted with suitably sized weatherproof (IP 55 minimum) Metallic Sealing Plugs to prevent water entry/ingress in motor windings through openings meant for cable entry in terminal boxes at construction site till the time motors are erected and cable terminations are carried out. However, same shall be replaced by associated flameproof cable glands and lugs to be also supplied by Contractor along with motors as specified in MR.

5.9 Vendor to note that, if there is any requirement of emergency electrical power for the auxiliary equipment supplied with the main motor/pump, same shall be highlighted at the bid stage only.

5.10 All motors shall have provision for double earthing.

5.11 In addition to packing requirements specified in EIL standard specification of motors, Vendor to do plastic wrapping of all electrical equipment for shipping from works to site.

6.0 GENERAL REQUIREMENT (FOR ALL EQUIPMENTS)

6.1 Numbering scheme for various equipment shall be decided during detail engineering and tag number/ service/ other details of all equipment shall be marked accordingly on the tag plate.

6.2 All equipment shall be tested and certified by an independent testing authority for use in the specified area. The following statutory approval certificates shall be submitted for all equipment to be installed in hazardous areas.

i) Type Test Certificate from independent testing authorities such as CIMFR / BASEEFA / ATEX / equivalent test house

ii) Applicable CCoE/ PESO approval certificates.

iii) Valid BIS license for all Ex-d equipment (equipment procured from India)

6.3 All equipment shall be subject to routine and acceptance tests as per applicable specifications.

6.4 All the instruments, meters, etc., used for testing shall be duly calibrated at NABL laboratory and necessary calibration certificate shall be made available during inspection.

6.5 All external hardware shall be of stainless steel in view of the corrosive atmosphere.

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6.6 Paint shade for indoor electrical equipment shall be RAL 7032, & for outdoor electrical equipment shall be RAL 7031.

6.7 Vendor to provide adequate size of motor terminal box to accommodate & terminate Owner's cable sizes (refer below table) and avoid additional intermediate JB for motor termination.

Cl. 6.2.5 of EIL specification 6-51-0064 Rev.3 is superseded by following clause.

"The terminals, cable lugs, terminal box, cable entries and cable glands shall be suitable for the minimum cables sizes as specified below for 2 pole, 4 pole or 6 pole motors. Motor terminal box shall be provided for the given cable size. However, the actual cable sizes shall be provided post order during detail engineering.

S. No	Motor rating (in kW) up to and including	Cable Size (mm^2)
1	0.12	1R X 3C X 4 Cu
2	0.18	1R X 3C X 4 Cu
3	0.25	1R X 3C X 4 Cu
4	0.37	1R X 3C X 4 Cu
5	0.55	1R X 3C X 4 Cu
6	0.75	1R X 3C X 4 Cu
7	1.1	1R X 3C X 4 Cu
8	1.5	1R X 3C X 4 Cu
9	2.2	1R X 3C X 10 Cu
10	3.7	1R X 3C X 16 Cu
11	5.5	1R X 3C X 35 Al
12	7.5	1R X 3C X 50 Al
13	9.3	1R X 3C X 70 Al
14	11	1R X 3C X 70 Al
15	15	1R X 3C X 120 Al
16	18.5	2R X 3C X 70 Al
17	22	1R X 3C X 240 Al
18	30	2R X 3C X 95 Al
19	37	2R X 3C X 150 Al
20	45	2R X 3C X 185 Al
21	55	3R X 3C X 150 Al
22	75	3R X 3C X 240 Al
23	90	4R X 3C X 185 Al
24	110	4R X 3C X 240 Al
25	132	5R X 3C X 300 Al
26	160	6R X 3C X 300 Al

(R: Nos. of cable run, C: Nos. of cable core)

In case it is not feasible to provide motor terminal box suitable to accommodate owner's cables (indicated above), then separate motor junction box shall be provided by vendor to accommodate owner's cable(s) without any time and cost implication to Owner. The Motor junction box shall be suitable for the specified gas group and temperature classification. JB shall be supplied with suitable cable glands & lugs.

Thread shall be Metric type. The enclosures of the junction boxes shall be of cast light metal alloy. The Junction Box shall be suitable for outdoor location and shall have minimum IP-55

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degree of protection. All accessories like nuts, bolts, washers etc. shall be made of stainless-steel SS-304.

6.8 Equipment (Motor, etc.) installed in outdoor area shall have FRP canopy for additional weather protection.

6.9 Cable glands shall be nickel-plated brass cable glands. The cable glands shall be single compression type for indoor equipment & double compression type for outdoor equipment. Cable glands for motor shall be supplied loose. For hazardous area equipment, cable glands shall be flameproof and shall meet all the requirement of IS/IEC-60079-0.

6.10 Cable lug material shall be selected based on the application as under: -

S. No.	Description	Cable lug material
1.	Copper conductor cable & copper bus bar/ terminals	Tinned Copper
2.	Copper conductor cable & Aluminium bus bar/ terminals	Bi-metallic (Copper barrel with Aluminium palm)
3.	Aluminium conductor cable & Copper bus bar/ terminals	Bi-metallic (Aluminium barrel with tinned Copper palm)
4.	Aluminium conductor cable & Aluminium bus bar/ terminals	Aluminium

All lugs supplied shall be heavy duty long barrel type only.

6.11 Lugs having sector shaped / circular barrel shall be used for making connections for cables having sector shaped / circular geometry of conductor respectively.

7.0 SPARES

7.1 Mandatory Spares

Mandatory spares for Electrical Equipment shall be as per Mandatory spares list document enclosed with MR.

7.2 Erection/ Commissioning Spares:

All erection/commissioning spares shall be included by the bidder in the quoted price. The list of such items shall be furnished along with the offer.

7.3 Two Years Operation & Maintenance Spares

Quote for vendor recommended spares for 2 year normal operation for electrical items. List of spares shall include the following as a minimum for motors.

Sl. No.	Part Description	Quantity
1.	**MV Motors**	
1.1.	Bearing Set (DE & NDE)	One set. of each type
1.2.	Terminal box cover with screw	One no. of each type
1.3.	Fan	One no. of each type
1.4.	Terminal block & bushing	One set each

8.0 MAKES OF EQUIPMENT AND COMPONENTS

8.1 List of approved vendors for Electrical equipment/components are as per vendor List Document (B862-101-16-50-VL-5180).

8.2 All equipments & components shall be of reputed makes with satisfactory track record and complete test certificates.

8.3 Vendor may procure material from any of the listed vendors. However current validity and range of approval as per EIL enlistment letter, workload, stability and solvency need to be verified by the vendor before placement of order.

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8.4 Vendor can offer equipments of makes other than those specified above during order execution. The alternate make of equipments will be evaluated post order, based on the satisfactory track record and complete test certificates to be furnished by the vendor.

8.5 For other equipments, vendor shall furnish the Past track record for makes selected by them and submit the same for purchaser review/approval along with necessary documents/credentials. Non- acceptance of a particular proposed vendor due to any reasons whatsoever shall not be a cause of schedule and cost implication. If equipments are sourced outside India, vendor shall obtain prior approval for make of equipments before placement of order.

9.0 ATTACHMENTS

Sr. No.	Document Title	Document No.	Rev.
1.	Data Sheet – MV Induction Motors – DOL Start	B862-000-16-50-DS-3201	A
2.	Data Sheet – Load Data Format	B862-000-16-50-DS-9901	A
3.	Vendor Data Requirement	B862-101-16-50-VR-5180	A
4.	Vendor List	B862-101-16-50-VL-5180	C
5.	Specification for energy efficient medium voltage induction motors	6-51-0064	3

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VENDOR LIST
(ELECTRICAL)
HORIZONTAL CENTRIFUGAL PUMPS

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

UNIT/UNIT NO : **PDH/101**

CLIENT : **M/s PETRONET LNG LIMITED (PLL)**

CONSULTANT / PMC : **ENGINEERS INDIA LIMITED**

JOB NO. : **B862**

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C	09.03.2026	REVISED & ISSUED WITH MR	MS	PK	SA
B	19.02.2026	REVISED & ISSUED WITH MR	MS	PK	SA
A	08.01.2026	ISSUED WITH MR	MS	PK	SA

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13JE		**Description :** MOTOR-INDUCTION-M.V(ZONE 2-TYPE e & n)		
Approved Suppliers				
1	L065	LAXMI HYDRAULICS PVT LTD	INDIA	
2	M282	MARATHON ELECTRIC MOTORS (INDIA) LTD.	INDIA	
3	4352	ABB INDIA LIMITED	INDIA	
4	B048	BHARAT BIJLEE LIMITED	INDIA	
5	A310	ABB INDIA LTD-FARIDABAD	INDIA	
6	3668	CG POWER & INDUSTRIAL SOLUTIONS LTD.	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13JK		**Description :** MOTORS - IMPORTED		
Approved Suppliers				
1	27420	TMEIC CORPORATION	JAPAN	
2	W598	WEG EQUIPAMENTOS ELETRICOS S.A.	BRAZIL	
3	W598A	WEGEURO - INDUSTRIA ELECTRICA S.A.	PORTUGAL	
4	L603	LLOYD DYNAMOWERKE GMBH & CO. KG	GERMANY	
5	L575	LOHER GMBH	GERMANY	
6	J511	JEUMONT SA / FRAMATONE ANP	FRANCE	
7	H510	HITACHI LTD	JAPAN	
8	G632	GENERAL ELECTRIC CANADA	CANADA	
9	C736	CEMP SRL	ITALY	
10	A717	NIDEC ASI SPA	ITALY	
11	A661	ASEA BROWN BOVERY LTD (ABB LTD)	SWITZERLAND	
12	C730	GE ENERGY POWER CONVERSION FRANCE SAS	FRANCE	
13	H641	HYUNDAI HEAVY INDUSTRIES CO. LTD	KOREA, PEOPLE'S DEMOCRATIC REPUBLIC OF	
14	T597	TOSHIBA CORPORATION	JAPAN	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13MA		**Description :** JUNCTION BOXES (FLAME PROOF)		
Approved Suppliers				
1	B024	BALIGA LIGHTING EQUIPMENTS (P) LIMITED	INDIA	
2	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
3	R175	R STAHL PVT LTD	INDIA	
4	3706	PHOENIX MECANO INDIA PVT. LTD.	INDIA	
5	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
6	4364	SAI INDUSTRIES	INDIA	
7	4245	FCG HI-TECH PRIVATE LIMITED	INDIA	
8	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
9	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	
10	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
11	G159	PEPPERL & FUCHS MANUFACTURING (INDIA) PRIVATE LIMITED	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 14CA		**Description :** CABLE GLANDS (HAZARDOUS AREA)		
Approved Suppliers				
1	C195	COMET BRASS PRODUCTS	INDIA	
2	C205	COMET INDUSTRIES	INDIA	
3	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
4	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
5	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
6	S375	STANDARD METAL INDUSTRIES	INDIA	
7	4360	CLEON OPTOBIZ PRIVATE LIMITED	INDIA	
8	3890	AKSHAR BRASS INDUSTRIES	INDIA	
9	4187	SIGMA INDUSTRIES	INDIA	
10	4364	SAI INDUSTRIES	INDIA	
11	3704	METAL CRAFT INDUSTRIES	INDIA	
12	B024	BALIGA LIGHTING EQUIPMENTS (P) LIMITED	INDIA	
13	4245	FCG HI-TECH PRIVATE LIMITED	INDIA	
14	27421	CMP PRODUCTS LIMITED	UNITED KINGDOM	
15	4244	METALMECH ENGINEERING	INDIA	
16	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
17	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13JD		**Description :** MOTOR INDUCTION-MV (INDUSTRIAL TYPE SAFE AREA)		
Approved Suppliers				
1	B048	BHARAT BIJLEE LIMITED	INDIA	
2	M282	MARATHON ELECTRIC MOTORS (INDIA) LTD.	INDIA	
3	A310	ABB INDIA LTD-FARIDABAD	INDIA	
4	L065	LAXMI HYDRAULICS PVT LTD	INDIA	
5	4157	ROTOMOTIVE POWERDRIVES INDIA LIMITED	INDIA	
6	3668	CG POWER & INDUSTRIAL SOLUTIONS LTD.	INDIA	
7	4199	MARATHON ELECTRIC MOTORS (INDIA) LTD.	INDIA	
8	4352	ABB INDIA LIMITED	INDIA	
9	3940	HEM INDUSTRIES	INDIA	
10	3986	HAVELLS INDIA LTD	INDIA	

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VENDOR DATA REQUIREMENTS
FOR
(ELECTRICAL) HORIZONTAL CENTRIFUGAL PUMPS

Rev. No.	Date	Purpose	Prepared by	Checked by	Approved by
A	07-JAN-2026	ISSUED WITH MR	MS	PK	SA

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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.	Schedule of Vendor Documents		✔		✔	
2.	Data Sheets (Duly filled-in)		✔		✔	
3.	Dimensional/Assembly Drawings : GA Drawing For motors < 75kW			✔		
4.	Dimensional/Assembly Drawings : GA Drawing For motors >= 75kW		✔			
5.	Dimensional/Assembly Drawings : Terminal Box Arrangement, Installation Plan/Mounting Details, Name Plate Drawing			✔	✔	
6.	Performance Curves : Speed Torque Curves, Speed-Current/Time Curves, Thermal Withstand Curves (Hot & Cold), P.f. & Efficiency Curves			✔	✔	
7.	Test certificates				✔	
8.	Type Test Certificates for similar equipment			✔	✔	
9.	List of Commissioning Spares			✔	✔	
10.	List of Maintenance Spares			✔		
11.	List of Mandatory Spares		✔		✔	
12.	List of Special Tools & Tackles			✔	✔	
13.	Data Books/ Manuals : Installation Manual				✔	
14.	Data Books/ Manuals : Operating/ Maintenance Manual				✔	
15.	Data Books/ Manuals : Catalogues/ Brochures			✔	✔	
16.	Equipment storage procedure at site				✔	

Notes :

1. "TICK" denotes applicability.
2. Post order, drawing / document review shall commence only after approval of Document Control Index (DCI).
3. All post order documents shall be submitted / approved through EIL eDMS portal.
4. Final documentation shall be submitted in hard copy (Six prints) and soft (two CDs/DVDs) in addition to submission through EIL eDMS.
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

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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. Bill of Material shall form part of the respective drawing.

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ELECTRICAL LOAD DATA

NOTES: -

1. Vendor shall fill the details of all electrical power consumer loads, which are included in the scope of this MR/Tender and submit with the offer.

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MOTOR

S.NO	TAG NO.	SERVICE	Make	Type of enclosure	Applicable standard for hazardous area application	Motor kW	Duty (continuous/intermittent)	No. of poles	Type designation for cooling

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OTHER ELECTRICAL LOADS

S.NO	TAG NO.	SERVICE	Make	Type of enclosure	Applicable standard for hazardous area application	Rated KW	Duty (continuous /intermittent)	Voltage

Project	PDH PP Plant with Ethane and Propane handling facilities		**Client**	PETRONET LNG LIMITED (PLL)	
Unit	Common	**Location**	**Job No.**	B862	**Unit No.** 000

PURCHASER'S DATA

A.	**Site Conditions**		
1.	Maximum Ambient Temperature	°C	45
2.	Minimum Ambient Temperature	°C	10
3.	Design Ambient Temperature	°C	45
4.	Relative Humidity	%	90
5.	Altitude	mm	less than 1000
6.	Environment		Heavily polluted
B.	**Technical particulars**		
1.	Motor Tag no.:		Refer Job Spec
2.	Driven Equipment name:		Refer Job Spec
3.	Voltage:	kV	6.6 +/- 6 %
4.	Phase:		Three
5.	Frequency:	Hz	50 +/- 3 %
6.	Fault level:	kA	40
7.	Fault Duration:	sec.	0.2
8.	System Earthing:		Resistance Earthing
9.	Duty:		Continuous
10.	Method of starting:		D.O.L
11.	Cable size:	mm²	Later
12.	Cable type:		Al./Cu. Cond. XLPE Insulated
13.	Temperature rise:	°C	75
14.	Cooling:		IC 411/511/611
15.	Insulation class:		F
16.	Temperature rise Limited to insulation class		B
17.	Hazardous area classification:		Refer JobSpec
18.	Dust classification		Refer JobSpec
19.	Gas group:		Refer JobSpec
20.	Dust Group		Refer JobSpec
21.	Type of explosion protection:		Refer JobSpec
22.	Prestart purging for Ex(n) motor		Not Required
23.	Type of ingress protection:		IP 55
24.	Reacceleration::		Refer job Spec
25.	Diff. protection CTs:		Refer Job Spec
26.	CT specs.:		
27.	Color shade:		Refer job Spec
28.	Thermisters:		Not Required
29.	RTD:		Required
30.	BTD:		Required
31.	RTD/BTD monitoring device:		Refer Job Spec
32.	Applicable specification:		6-51-0031

DRIVEN EQUIPMENT MANUFACTURER's DATA

1.	Suggested motor rating:	kW	

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Project PDH PP Plant with Ethane and Propane handling facilities **Client** PETRONET LNG LIMITED (PLL)

Unit Common **Location** **Job No.** B862 **Unit No.** 000

2.	Manufacturer:		
3.	Type of driver mounting:		
4.	Driven equipment:		
5.	Shaft kW:	kW	
6.	kW at maximum load:	kW	
7.	Speed:	RPM	
8.	Rotation of eqpt. from coupling end:		
9.	Coupling type:		
10.	Torque required starting	mkg	
11.	Torque required Maximum	mkg	
12.	GD2 of eqpt including flywheel	kgm²	
	excluding flywheel:	kgm²	
13.	Maximum thrust:	kg	
14.	Pulsation rate:		
15.	Starting condition:		

MOTOR MANUFACTURER's DATA

1.	Rating:	kW	
2.	Manufacturer:		
3.	Frame designation:		
4.	No. of poles:		
5.	Full load speed:	RPM	
6.	Mounting:		
7.	Full load torque (FLT):	mkg	
8.	Starting torque:	% of FLT	
9.	Break down or pull out torque	% of FLT	
10.	Full load current (FLC):	A	
11.	Starting current at 100%	% of FLC	
12.	Rotation viewed from coupling end:		
13.	Starting time at 80%/100% voltage:	sec.	
14.	Locked rotor withstand time (cold/hot) at,		
	80% voltage	sec.	
	100% voltage:	sec.	
15.	Time (Te) for Increased Safety Motor at 100% Voltage		
16.	Efficiency at 75%/100% Load:	%	
17.	Power factor at 75%/100% Loa		
18.	Heating/Cooling Time Const. (min.)	min	
19.	Space heater - voltage & power:		
20.	Moment of inertia, GD2:	kgm²	
21.	DE/NDE bearing type & no.:		
22.	Type of lubrication:		
23.	Type of main terminal box:		
24.	Type of neutral terminal b		
25.	No. of Terminals		
26.	Weight of motor:	kg	

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Project	PDH PP Plant with Ethane and Propane handling facilities		**Client**	PETRONET LNG LIMITED (PLL)	
Unit	Common	**Location**	**Job No.**	B862	**Unit No.** 000

27.	Thermisters, quantity	no.	
	make: type:		
28.	RTD, quantity:	no.	
	make: type:		
29.	BTD, quantity	no.	
	make: type:		
30.	Shaft voltage:	V	
31.	Critical speed, 1st/2nd st	RPM	
32.	Pressurization panel:		
	make: type:		
33.	Canopy:		
34.	Fan rotation Design		

Eil Notes

1 Starting time calculations shall be based on operating conditions specified on Material Requisition eg. open valve ccondition/closed valve condition, at no load/full load, as applicable.
2 Canopy shall be provided for all outdoor motors.

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Project	PDH PP Plant with Ethane and Propane handling facilities		**Client**	PETRONET LNG LIMITED (PLL)	
Unit	Common	**Location**	**Job No.**	B862	**Unit No.** 000

PURCHASER'S DATA

A.	**Site Conditions**		
1.	Maximum Ambient Temperature	°C	45
2.	Minimum Ambient Temperature	°C	10
3.	Design Ambient Temperature	°C	45
4.	Relative Humidity	%	90
5.	Altitude	mm	less than 1000
6.	Environment:		Heavily polluted
B.	**Technical particulars**		
1.	Motor Tag no.:		later
2.	Driven Equipment name:		as per job spec
3.	Voltage:	V	415 +/- 6 %
4.	Phase:		Three
5.	Frequency:	Hz	50 +/- 3 %
6.	Fault level:	kA	50
7.	Method of starting:		D.O.L
8.	Winding Connection:		Delta
9.	No of Terminals:		6
10.	Cable size:	mm^2	During Detailed Engg.
11.	Cable type:		Al./Cu. Cond, XLPE insulated
12.	Temperature rise:	°C	75
13.	Cooling:		IC411
14.	Insulation class:		F
15.	Temperature rise Limited to insulation class		B
16.	Hazardous area classification:		Refer Job Specification
17.	Dust classification		Refer Job Specification
18.	Gas group:		Refer Job Specification
19.	Dust Group		Refer Job Specification
20.	Type of explosion protection:		Refer Job Specification
21.	Prestart purging for Ex(n) motor		Not Required
22.	Type of ingress protection:		IP 55
23.	Color shade:		AS PER SPEC
24.	Thermisters:		Not Required
25.	RTD:		Not Required
26.	BTD:		Not Required
27.	RTD/BTD monitoring device:		Not Required
28.	Applicable specification:		EIL Spec. 6-51-0064
29.	Efficiency:		IE 3

DRIVEN EQUIPMENT MANUFACTURER's DATA

1.	Suggested motor rating:	kW	
2.	Manufacturer:		
3.	BkW at Full load:	kW	
4.	kW:at end of Curve	kW	

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Project PDH PP Plant with Ethane and Propane handling facilities **Client** PETRONET LNG LIMITED (PLL)

Unit Common **Location** **Job No.** B862 **Unit No.** 000

5.	Speed:	RPM	
6.	Rotation of eqpt. from coupling end:		
7.	Driven equipment:		
8.	Coupling type:		
9.	Torque required starting	mkg	
	Torque required Maximum	mkg	
10.	GD2 of eqpt including flywheel	kgm²	
	excluding flywheel:	kgm²	
11.	thrust Up:	kg	
	thrust Down:	kg	
12.	Starting condition:		

MOTOR MANUFACTURER's DATA

1.	Rating:	kW	
2.	Manufacturer:		
3.	No. of poles:		
4.	Frame designation:		
5.	Full load speed:	RPM	
6.	Mounting:		
7.	Full load torque (FLT):	mkg	
8.	Starting torque:	% of FLT	
9.	Break down or pull out torque:	% of FLT	
10.	Full load current (FLC):	A	
11.	Starting current at 100% voltage:	% of FLC	
12.	Rotation viewed from coupling end:		
13.	Starting time at 75% voltage:	sec.	
	100% voltage:	sec.	
14.	Locked rotor withstand time (cold/hot) at,		
	75% voltage	sec.	
	100% voltage:	sec.	
15.	Time (Te) for Increased Safety Motor at 100% Voltag	sec.	
16.	Heating/Cooling Time Const. (min.)	min	
17.	Space heater - voltage & power:		
18.	Efficiency at 75% Load:	%	
	100% Load: voltage:	%	
19.	Power factor at 75%/ Load:		
	100% Load:		
	starting		
20.	Moment of inertia, GD2:	kgm²	
21.	NDE bearing type & no		
22.	DE bearing type & no.:		
23.	Type of lubrication:		
24.	Weight of motor:	kg	

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Project	PDH PP Plant with Ethane and Propane handling facilities		**Client**	PETRONET LNG LIMITED (PLL)	
Unit	Common	**Location**	**Job No.**	B862	**Unit No.** 000

25.	Thermisters, quantity	no.	
	make: type:		
26.	RTD, quantity:	no.	
	make: type:		
27.	BTD, quantity	no.	
	make: type:		
28.	Shaft voltage:	V	
29.	Critical speed, 1st/2nd stage:	RPM	
30.	Canopy:		

Notes

1 canopy shall be provided for all outdoor motors

2 Starting time calculations shall be based on operating conditions specified on Material Requisition eg. open valve condition/closed valve condition, at no-load/full load, as applicable

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JOB SPECIFICATIONS (INSTRUMENTATION) FOR HORIZONTAL CENTRIFUGAL PUMPS (SPP)

FOR

MR No. B862-101-PA-MR-5180

PROJECT	:	**PDH PP PLANT WITH ETHANE AND PROPANE HANDLING FACILITIES AT DAHEJ, GUJARAT**
UNIT/UNIT NO.	:	**PROPANE DEHYDROGENATION UNIT (PDH) / 101**
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
E	08.04.2026	Issued with MR	MK	AJS	KS
D	02.04.2026	Issued with MR	MK	AJS	KS
C	19.03.2026	Issued with MR	MK	AJS	KS
B	12.02.2026	Issued with MR	MK	AJS	KS
A	08.01.2026	Issued with MR	MK	AJS	KS

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1.0 GENERAL

1.1 The purpose of this specification is to define general requirements and philosophy of instrumentation for Horizontal Centrifugal Pumps (Special Purpose Process) with Mechanical Seal Flushing Plan as per API-610 as follows:

S.NO.	PUMP TAG	PUMP DESCRIPTION	SEAL PLAN	SEAL PLAN INSTRUMENT TYPE
1	101-PA-0006	METHANOL UNLOADING PUMP	53B	WIRELESS
2	101-PA-0007	METHANOL PUMP	53B	WIRELESS
3	102-PA-7001 A/B	FIRE WATER BOOSTER PUMP	11, 61	WIRELESS

1.2 This specification along with attached data sheets / standards and relevant part of this requisition covers the design, engineering, supply and testing of Instrumentation system with all accessories and materials, required for the above listed Horizontal Centrifugal Pumps (Special Purpose Process).

1.3 If there is any conflict between this specification, data sheets, related standard, code etc. vendor shall refer the matter to owner/consultant for clarification and only after obtaining the same should proceed further.

2.0 SCOPE OF SUPPLY AND WORK (Refer Part-C of B862-101-80-42-SS-5180 attached elsewhere)

3.0 DESIGN PHILOSOPHY AND TECHNICAL REQUIREMENTS

3.1 All electronic field transmitters shall be suitable for intrinsic safe circuit and shall be certified suitable for Zone-2 Gr IIA/B/C, Temp. Class T3; Hazardous area classification by statutory body. All the instruments shall also be dust proof. Additionally, instruments shall be certified by PESO India, irrespective of the origin of the instrument. HART based instruments shall be Dual certified (Intrinsically safe and flame proof), FF Instruments shall be Intrinsically safe and Wireless Instruments shall be flameproof suitable for hazardous area mentioned above.

3.2 All instruments shall be weatherproof to IP-65 as per IS/IEC-60529.

3.3 In place of process switches (pressure, temperature, level, etc.), Wireless type transmitters shall be provided for seal plan. Wherever for any particular instrument, wireless type is not available from any manufacturer; Foundation Field bus transmitters shall be used for PDH unit pumps. Pump Vendor shall provide the alarm set values during detail engineering.

Other than pump seal plan instruments, all other instruments used for control & monitoring (open loop & closed loop) shall be Foundation field bus type for PDH unit pumps. Instruments used for Shutdown & interlock application shall be Smart instrument with 4-20mA HART output.

Motor bearing and winding temperature elements shall be connected to DCS for monitoring through temperature transmitters.

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3.4 Smart transmitters when specified shall be used in analog mode with an accuracy of ± 0.05% of span with a rangeability of 10:1 unless specified otherwise.

3.5 All smart transmitters shall be suitable to be configured using Purchasers Universal type Hand held communicator.

3.6 Field transmitter supports should be properly clamped to the pipe for closed couple installation. No air gap shall be kept between support clamp and pipe.

3.7 FF Transmitter shall be bus powered type. FF transmitter shall have interoperability test clearance complying ITK (latest revision). FF transmitter shall also have capability to become device link master whenever required. It shall be compatible with EDDL (Electronic Device Description Language) as per IEC 61804, latest revision or FDT/DTM requirements.

3.8 All field instruments/transmitters shall be provided with dual cable entries. Unused entry shall be plugged using suitable metallic plug. All cable entries shall be 1/2" NPT (F) size and shall be fitted with double compression type SS304 cable glands with Slipper type PVC sleeves (cable shrouds). Cable glands & plugs shall be certified & suitable for hazardous area classification as indicated elsewhere in the MR.

3.9 All instruments and installation material shall have pressure and temperature rating equal to or better than the corresponding piping or pressure vessel rating on which instruments are installed. Pressure rating of thermowell for temperature element/ temperature gauge, control valves and on-off valves body and flanges shall be minimum 300# rating or as per respective piping specification whichever is higher.

3.10 Instrument connection on vessels, standpipes and tanks shall be as per 7-52-0001 and Instrument connection on pipes shall be as per 7-52-0002. The minimum rating of all instrument nozzles on the vessels shall be 300#. Equipment/ Standpipe connection and first Block Valve for D.P Instrument on vessel, Pressure / thermowell for temperature Instrument on vessel and equipment are to be considered as 2” Flanged.

3.11 All instruments shall have internal terminal block, anti-vibration type for cable termination. Flying leads are not acceptable.

3.12 S.S. tag plates shall be provided for all the instruments.

3.13 Prefabricated FRP canopy shall be used for field electronic instruments. It shall be machine moulded type. Canopy for transmitters shall cover Top and all 3 sides (Back & two sides); canopy for JB shall cover top side only.

FRP canopy shall have sheet thickness of 4mm (min.) along with mounting bracket of plate material SS304. Colour of the canopy shall be Light grey. SS canopy instead of FRP, if offered by package vendor, shall also be acceptable.

Typical characteristics of FRP canopy shall be following:

a) High mechanical strength

b) Weather resistant (Resistant to most of the acids, alkalis, vapors & fumes).

c) UV resistant

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d) Anti-Static

e) Special rubber grommets for Cable/ Tube entry

3.14 Vendor shall furnish instrument data sheets (as per ISA format) for each tag incorporating necessary sizing, range selection, material selection, make and model nos. Vendor can use in-house data sheet formats, provided those contain all information as per ISA formats, as a minimum. Vendor shall furnish filled in data sheet for each tag after sizing, range selection, material selection etc. These data sheets shall be reviewed / retained for records by purchaser after placement of order. Proper selection of instruments, materials etc. shall be Vendor's responsibility. Any necessary change required later for meeting the specification shall be done by the Vendor without any price or delivery implications. While filling the instruments data sheets, the following shall be taken care:

a) All the relevant data shall be filled in. If any point is not applicable then N/A shall be indicated.

b) Make and model number of the offered instruments shall be indicated with model decoding details for offered instrument, without model no, data sheet shall not be reviewed.

c) Vendor seal with signature shall be provided and pump vendor shall ensure the correctness of the process data.

d) Instruments tag numbers /data sheet numbers shall be indicated.

3.15 **Level Transmitter (GWR or DP Type)**

a) Level Transmitter shall be Time Domain Reflectometry type guided wave radar level instrument or Differential Pressure type.

b) Sensor (Wave Guide or diaphragm) shall be supplied along with process wetted parts material suitable for process fluid (SS316 / 316L as minimum).

c) For Guided wave radar accuracy shall be ±3.0mm.

d) Transmitter housing shall be of die cast Aluminum material, weatherproof to IP65 and suitably IS certified for specified hazardous area.

e) For GWR Level transmitter Chamber and other accessories materials like mounting Flanges; Stud bolts material shall be suitable for the process fluid.

f) For DP type Level transmitter specifications, refer s.no. 3.18.

3.16 **Level Gauge**

a) Magnetic type shall only be used as a default unless any specific requirement. Float operated magnetic gauges with 2" (50 mm) flanged end connections, shall be used.

b) C to C length of single magnetic level gauge shall not be more than 2500mm.

c) All level gauges shall be provided with vent/drain valves with plug or connected to closed drain/vent as per P&ID and job specifications. For higher rating (i.e.

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rating more than 600 class) and Hydrogen services, flanges shall be used instead of plugs.

d) All gauges shall have side - side chamber connections, unless otherwise specified. In addition, each gauge shall be provided with ball check valves and pipe union.

e) Vessel (Seal Pot) connection for level gauge shall be 3/4" NPT (F) with primary isolation valve and 3/4" spherical union.

f) Studs and bolt material shall be ASTM A193 Gr. B7 and ASTM A194 Gr. 2H respectively.

3.17 Pressure Gauge

a) Pressure gauge dial shall be 150mm white of non-rusting material with black figures. Pressure gauge shall have safety type solid front for operating pressure of 0-100 Kg/cm2g and more.

b) Pressure gauge shall have 1/2" NPT (M) bottom connection.

c) Pressure gauge shall be provided with features like screwed bezel, externally adjustable zero, over range protection and blow out disc.

d) Sensing element (bourdon tube) shall be of SS 316 and movement of SS 304, as a minimum. Case material for pressure gauges shall be SS 304.

e) Pressure gauge shall have an accuracy of ± 1% of URV (Upper Range Value) and range shall be so selected that gauge normally operates in middle third of the range.

f) Pressure gauge shall be suitable for maximum pressure or 130% of the range whichever is higher, without any calibration drift.

3.18 Transmitter (SMART HART/ WIRELESS)

a) All transmitters used in the pump seal plan (101-PA-0006, 101-PA-0007) shall be wireless type and shall be suitable for the specified area class. All wireless devices and its accessories in the network shall comply with WIRELESS HART as per IEC62591 or ISA100.11a. Wireless Gateways shall enable communication between Host Applications and Wireless Field Devices in the Wireless Network.

b) Process data and set points shall be updated at the rate of 4secs or better. Diagnostic data transfer shall be available which includes configuration, calibration, battery health etc.

c) Wireless devices shall be power sourced by low power battery. Battery shall have life of about 2 years and IS certified. Vendor shall provide additional battery required for each transmitter for 5 years operation. The shelf life of the battery shall be minimum 10 years. Battery drain indication / alarm shall be available in host system as part of diagnostics / maintenance data.

d) Integral LED/LCD output meter shall be provided for all transmitters.

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e) Transmitter's calibrated accuracy shall be of ± 0.05% of span. Calibrated accuracy for diaphragm seal transmitters shall be ± 0.25% of span.

f) Transmitters shall have minimum static pressure/overpressure rating of 160 kg/cm2g except for very low-range for which the static pressure will be considered suitably based on the availability.

g) Threaded end connections shall be to NPT as per ANSI B 1.20.1. Flanged end connections shall be as per ANSI B 16.5.

3.19 **Pressure Relief Valve / Thermal Relief Valve**

a) Pressure Relief Valve shall meet the limiting relief valve requirements as defined in API RP-520 (part-I & II) and in API-526.

b) Pressure Relief Valve shall be full nozzle full lift type and Thermal Relief Valve shall be modified nozzle type.

c) The percentage accumulation in case of pressure relief valves/safety valves shall be as follows:

a)	Steam Service	
	- ASME SEC I (steam generation/consumption)	3%
	- IBR (Before steam let-down station)	5%
	- IBR (Distribution & utilities) and ASME Section VIII	10%
b)	Gas, Vapour or liquid for process service	10%
c)	Liquid for thermal Relief	25 / 10% as per process requirement
d)	Fire exposure on unfired vessels	21%

d) The body material shall, as a minimum, be as per piping specifications. Nozzle and disc material shall be SS316 as a minimum with machined stainless-steel guide and spindle. Whenever semi nozzle designs are unavoidable, body material shall be at-least same as nozzle and disc material.

e) For modified or semi nozzle PSV/TSV body material shall be same as nozzle and disc material.

f) Spring material shall be selected as per operating conditions. Normally it shall be Nickel/Zinc/Aluminum plated Carbon Steel.

g) Pressure Relief Valve shall have flanged connections for sizes 1" and above and shall have screwed connection for sizes 3/4" and below. 3/4" x 1" threaded (NPT) modified nozzle type valves with typically 0.38 cm2 orifice size shall be specified for thermal relief. However, if discharge is connected to flare or with variable back pressure more than 10% of set pressure, 1D2 flanged valves as per API-526 as a minimum to be provided.

h) Pressure relief valve type shall be Bidder's responsibility suitable for the system. Conventional valves shall be specified for constant back pressure while bellows seal type valves shall be specified for variable back pressure. Pilot operated pressure relief valves shall be used when Back pressure is greater than 50% of set pressure or when the difference between operating pressure and set pressure is within 10% of the set pressure.

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i) PSV's shall be supplied with lifting levers. Open lifting levers (i.e. non-packed) are not acceptable. Packed Levers are recommended.

3.20 Temperature Gauges

a) The temperature gauges shall be bimetallic type and shall be provided with 1½" flanged (min. 300# rating) thermowell with ½" NPT (F) connection for temperature gauges.

b) Thermowell shall be fabricated out of bar stock.

c) Temperature gauges shall have accuracy of ± 1 % of URV (Upper Range Value).

d) All local temperature gauges shall have 150 mm dial size. The bulb size shall be selected to suit the thermowell.

e) Thermowell and flanges of Thermowell shall be minimum of SS-316 or better to suit the service conditions.

f) Case material for temperature gauges shall be SS 304 as per IS/IEC-60529.

3.21 Restriction Orifice Plate:

a) Restriction Orifice Plate shall be concentric square edged type.

b) Each Restriction Orifice Plate shall have an integral handle, which shall, upon assembly with flanges, extend to a distance of 50 mm. with following information punched on it:

- Tag Number.
- Nominal pipe size in inches and rating in psi.
- Material of plate.
- Bore diameter

c) Restriction Orifice Plate material shall be SS 316 as a minimum or better.

d) Bidder to refer EIL Standard specification **6-52-0006 (Restriction Orifice Plates).**

3.22 Temperature Elements

a) All Thermocouple / RTD shall be Duplex.

b) RTD shall be used for operating temperature up to 400 Deg. C and for motor bearing and winding temperatures. Above 400 deg C (operating) K-type thermocouples shall be used.

c) Elements shall be spring loaded, mineral insulated and shall have stainless steel sheath as a minimum.

d) The thermocouple shall be un-grounded type.

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e) Thermocouples shall be as per IEC-60584-2/IS-7358 and shall have a wire size of 20 AWG for duplex thermocouples.

f) RTD (Resistance Temperature Detector) shall be platinum element 3 wire type with 100 ohms resistance at 0˚C calibrated as per IEC 60751 and accuracy class A.

g) RTD for bearing temperature measurement shall be thin film RTDs with insulation resistance of 2000 M-ohms shall be provided. Vendor shall provide proper mounting & routing provision for RTD leads through proper slots/tubes inside the casing.

3.23 Junction box shall be weatherproof to IP 65 and flameproof (Ex-d Type certified for hazardous area indicated) as a minimum. Junction Boxes terminals shall be screwless clamp– on type. Ferrules used shall be single sleeve with source destination type. Cross ferruling philosophy shall be followed for wiring.

3.24 In-case of foundation fieldbus instruments junction boxes shall be provided by the purchaser.

3.25 **Installation Standards/ Material:**

Pressure instrument installation shall be Close coupled with 2-valve manifold. Instrument impulse lines shall be piping. Oval flange adaptor along with the instrument as well as with 2-valve manifolds (for PTs) shall be considered for installation.

EIL installation standards shall be provided during detail engineering and vendor to develop hookup drawings based on EIL installation standards and submit the same for review/ approval.

For seal oil, lube oil services tubing is also acceptable.

3.26 **Local control Panel (as applicable):**

Local control panels (LCP) (as applicable) shall be used only for start-up and normal critical operations. Unless otherwise indicated in the package, following points shall be kept in mind while engineering the local control panels:

Weatherproof (IP65) local control panel shall be provided by Bidder for classified area, wherein the Alarm Annunciator shall be intrinsically safe and push button, lamps; selector switches shall be flame-proof “Exd” type mounted on LCP. Barriers for IS alarm annunciator and Barriers for all the alarm contacts shall be supplied by bidder shall be supplied by Bidder along with IS annunciator and Purchaser will provide potential free contact for the same. The IS power supply module for alarm annunciator shall be installed in a flameproof box in local panel. For Lamps, Purchaser will provide wet contact. The Power supply distribution box inside the Local Panel shall also be flame-proof “Exd’.

Electronic Components / system located at local panel shall be suitable for combined effect of outdoor ambient/climatic conditions and current carrying for installation in LCP. Bidder shall confirm with catalogue / document mentioning ambient temperature rating of Bidders supplied Electronic Components / system suitable for

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installation in local control panel or else Bidder shall supply necessary cooling arrangement.

Power supply (240 V AC (UPS ± 10%, 50Hz ± 3%) and / 240V AC 50Hz Non-UPS. 50Hz ± 3%) shall be given at one place near each panel in the field by Purchaser. Further distribution shall be by Bidder. Bidder shall indicate the power consumption for 240 VAC (UPS) and 240 VAC (Non-UPS) for package, along with the bid proposal.

3.27 **Vibration & Temperature Monitoring (As applicable):**

Vibration and temperature probes for pumps shall be provided as defined elsewhere in this requisition. Vibration probe shall be proximity type and Temperature probes shall be RTD PT 100. All the vibration & temperature probes shall be provided with vibration and temperature transmitters with 4-20mA output which shall be connected to DCS for monitoring. All the cable between vibration and temperature probes and transmitters shall be supplied by the vendor. Temperature transmitters shall be dual compartment type. Vibration transmitter shall be wireless type.

RTD (Pt 100 at 0°C, 3 wires) shall be used for motor bearing & winding temperature measurement. RTD Element shall be duplex type. Incase vendor cannot provide duplex type temperature element, two simplex type temperature elements instead of one duplex type temperature element can be provided. Terminal Junction box shall be provided for connecting all the temperature elements on the motor. Motor bearing and winding temperature elements shall be connected to temperature transmitters. Temperature transmitter shall be mounted inside the suitable weatherproof junction box. This Junction box and interconnecting RTD extension cable between Terminal box and temperature transmitters shall also be supplied by the vendor.

3.28 **TUBING AND TUBE FITTINGS**

3.28.1 Impulse tubing size shall be ½" OD with 0.049" wall thickness (SS 316L) and fitting (SS 316) shall be used.

3.28.2 For air supply 6 mm OD with 1mm wall thickness SS 316L tubing and SS 316 fitting shall be considered. 12 mm OD with 1.2 mm wall thickness tubing may be used if required for any faster valve operation as per Licensor/Process requirement.

3.28.3 For steam tracing, 3/8" OD with 0.049" wall thickness Bare Copper tube with brass fittings as per IS319 shall be used.

3.29 **DRAWINGS AND DOCUMENTS**

3.29.1 Softcopy of all instrumentation documentation shall be submitted in editable format for loading into purchaser's Documentation Node. Contractor to ensure that all final as-built instrumentation documentation are submitted as separate volume / section.

3.29.2 The Bidder shall generate and submit all instrument datasheets, Cable Schedule, and Instrument Index using Intergraph Smart Plant Instrumentation (SPI) 13.1. Bidder shall provide the editable Instrument Index once the Final approved P&ID is available for generating blank .isf files for the tags in the Instrument Index. Accordingly, vendor shall fill those blank sheet using external editor and provide the filled in .isf files for merging vendor datasheet with Purchaser's database.

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Vendor shall prepare instrument datasheets using the same only and submit pdf outputs for review/records and after finalization, the final ".isf file" shall be submitted for migrating the data into purchaser's main SPI database.

3.29.3 The Fieldbus devices configuration shall be provided by Bidder in the form of soft file (CD) as part of VDR during detailed engineering.

3.30 **SITE CONDITIONS & CLIMATE:**

All instruments covered in this package shall be suitable for unprotected installation field in Hot, humid environment having ambient conditions mentioned elsewhere in the MR.

4.0 TAG NUMBERING

4.1 Instrumentation symbol shall follow latest edition of ISA standard S 5.1.

4.2 All vendor-supplied instruments shall have Tag No. as per the format indicated below. Numerical no. for all the instruments shall be unique i.e. without any repetition of tag no. for same type of instrument.

AAA-BBBBB-CCCDDEE

AAA= Unit Number (Alphanumeric)
BBBBB= Instrument Identifier, Refer ISA S 5.1 (Alphabetic)
CCC= Last three digits of P&ID no. (Numeric)
DD= Instrument serial / loop number (To be allotted during detail engineering.) (Numeric)
EE = Suffix, If Applicable (Alphabetic)

All Instruments in a loop shall have the same last five digits even if they appear in different P&IDs. Local Pressure, Temperature and Flow to be designated as PI, TI and FI respectively.

5.0 INSPECTION:

a) All instruments and system-oriented items shall undergo factory testing and inspection by Owner and EIL, unless specified otherwise.

b) The inspection and testing shall be carried out as per related specifications, international codes and practices/ standards, approved documents and/ or any other document attached elsewhere in this document.

c) Bidder to ensure all special testing requirements like Radiography, Hydrogen service and other NDT requirements for all the instruments/ instrument castings shall be carried out as per the PMS requirements.

Notes:

1. Vendor shall generate required P&ID's and process data sheet for all instruments within package battery limit.

2. All post-order instrument documents/ drawings shall be submitted after issue of P&IDs. The submission of document / drawing is sequenced in such a way that submitted document/ drawing is neither dependent nor changed due to

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drawing / document yet to be submitted. Document/ drawing submission schedule shall be made accordingly.

3. Contractor shall be responsible for obtaining all statutory approvals, as applicable, for all instruments and control systems.

4. A copy of approval for intrinsically safe/flameproof enclosure, whenever specified, shall be provided as per following:

   a) For all electrical items manufactured in India, the testing shall be carried out & test report issued by Indian test laboratory recognized by the Chief Controller of Explosives and valid copy of BIS license (only for Ex Electric Apparatus having flameproof type protection) or IECEx Certificate of Conformity, valid copy of IECEx Quality Assessment Report (summary) and IECEx Test Report.

   b) For all electrical items manufactured outside India, Test report issued by Indian test laboratory recognized by the Chief Controller of Explosives and valid copy of BIS license or IECEx Certificate of Conformity, valid copy of IECEx Quality Assessment Report (summary) and IECEx Test Report. OR EU Type Examination Certificate (Applicable for manufacturers having manufacturing locations in countries covered under the European Union), valid copy of Production Quality Assessment / Assurance Notification

   c) For installations in India, additionally a copy of approval for intrinsically safe/flameproof enclosure from local statutory authority i.e 'Petroleum and Explosives Safety Organization (PESO), Nagpur in India' shall also be provided based on above.

5. Approvals other than above shall neither be offered nor will these be acceptable.

6. Any Instrument loose supplied items are to be packed separately instead of packing the same with other mechanical items while shipping to site.

6.0 Vendor list

The procurement of all instruments shall be strictly from the manufacturers listed in EIL/Owner approved vendor list (B862-101-16-51-VL-5180) attached elsewhere in this bid package. If EIL/Owner vendor list does not cover some instrument items, the package vendor shall submit the sub-vendor list for such instrument items for EIL/Owner approval. It shall be approved by EIL / purchaser during detail engineering. This shall have no impact on price and delivery schedule. Vendor shall take prior approval of make and specification of all instrument items before placement of order on sub-vendor. Vendor list provided in the MR is for the Make only, and not for any specific Model. For any instrumentation item, the offered model for the same must meet the specification and proven track record (PTR) requirement.

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VENDOR DATA REQUIREMENTS
FOR
HORIZONTAL CENTRIFUGAL PUMPS
(INSTRUMENTATION)

Rev. No.	Date	Purpose	Prepared by	Checked by	Approved by
D	02-APR-2026	Issued for MR	MK	AJS	KS
C	19-MAR-2026	Issued for MR	MK	AJS	KS
B	12-FEB-2026	Issued for MR	MK	AJS	KS
A	08-JAN-2026	Issued for MR	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.	Drawing and Document Schedule		✔		✔	
2.	Instrument Index			✔		
3.	Sub-Vendor List for Instruments and accessories			✔	✔	
4.	Instrument Sizing calculations		✔		✔	
5.	GA of instrumentation items supplied			✔	✔	
6.	Instrument Details for database generation			✔	✔	
7.	Instrument Cable Schedule			✔	✔	
8.	Instrument Installation Drawings			✔	✔	
9.	Spare part list for 2 years operation	✔		✔	✔	
10.	Spare part list for Start up, Commissioning & Consumables			✔		
11.	Spare part list for Mandatory Spares	✔		✔	✔	
12.	Installation, operation, Programming and maintenance manuals			✔	✔	
13.	Certificates (Statutory/ Inspection/ Calibration test)			✔	✔	
14.	All Fieldbus instruments - Necessary data like Device Tag, Device type, Device revision, Device address, DD file revision, CFF revision, ITK version etc as actually configured in the supplied instruments shall be provided in CD.			✔	✔	
15.	Alarm Set points			✔	✔	
16.	Datasheets for all instruments (including catalog with model decoding)			✔	✔	*Information pertaining to SMART/FF field devices, NOTE -10 & 11*
17.	Technical Compliance Statement	✔				

Notes :

1. All post-order instrument documents/ drawings shall be submitted after issue of P&IDs. The submission of document / drawing is sequenced in such a way that submitted document/ drawing is neither dependant nor changed due to drawing / document yet to be submitted. Document/ drawing submission schedule shall be made accordingly.
2. "TICK" denotes applicability.
3. Post order, drawing / document review shall commence only after approval of Document Control Index (DCI).

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4. All post order documents shall be submitted / approved through EIL VDMS portal.
5. Final documentation shall be submitted in hard copy (Six prints) and soft (two CDs/DVDs) in addition to submission through EIL Vendor Document Management Portal.
6. 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.
7. 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).
8. Refer - 6-78-0001: Specification for quality management system from Bidders.
9. Refer - 6-78-0003: Specification for documentation requirement from Suppliers.
10. Review Only for Critical items like Pressure Safety Valve, self actuated control valves. Others are for Records only.
11. Bidder shall furnish instrument data sheets for each tag incorporating necessary sizing, range selection, material selection, make and model nos. Bidder to provide all documents in SPI format -Smart Plant Instrumentation 13.1. These datasheets shall be reviewed/ retained for records by purchaser after placement of order. Proper selection of instruments, materials etc. shall be bidder's responsibility. Any necessary change required later for meeting the specification shall be done by the Bidder without any price or delivery implications.
12. Bidder shall generate required P&ID and process data sheet for all instruments within package battery limit.

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VENDOR LIST (INSTRUMENTATION) FOR HORIZONTAL CENTRIFUGAL PUMPS

FOR

MR No. B862-101-PA-MR-5180

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
D	02.04.2026	Issued with MR	MK	AJS	KS
C	19.03.2026	Issued with MR	MK	AJS	KS
B	12.02.2026	Issued with MR	MK	AJS	KS
A	03.01.2026	Issued with MR	MK	AJS	KS

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15CB		**Description :** SIGNAL CABLES		
Approved Suppliers				
1	4135	PAGODA CABLES PRIVATE LIMITED	INDIA	
2	R203	LKB ENGINEERING PRIVATE LIMITED	INDIA	
3	3669	KEI INDUSTRIES LIMITED	INDIA	
4	L612	LEONI KERPEN GMBH	GERMANY	
5	D012	DELTON CABLES LIMITED	INDIA	
6	3854	CHANDRESH CABLES LIMITED	INDIA	
7	C145	CORDS CABLE INDUSTRIES LTD	INDIA	
8	T243	T C COMMUNICATION PVT. LTD.	INDIA	
9	A034	ASSOCIATED CABLES PVT LTD	INDIA	
10	K190B	KEC ASIAN CABLES LIMITED	INDIA	
11	S304	SUYOG ELECTRICALS LTD	INDIA	
12	T212	THERMO CABLES LTD (FORM. T-150)	INDIA	
13	E063	ELKAY TELELINKS LTD.-	INDIA	
14	H060	HAVELLS INDIA LTD	INDIA	
15	3663	LAPP INDIA PVT LTD	INDIA	
16	3722	POLYCAB INDIA LIMITED	INDIA	
17	3724	CORDS CABLE INDUSTRIESLTD.	INDIA	
18	4001	RAVI INDUSTRIES	INDIA	
19	3773	TEMPSENS INSTRUMENTS INDIA LIMITED	INDIA	
20	3782	POLYCAB INDIA LIMITED	INDIA	
21	3765	THERMO CABLES LTD.	INDIA	
22	3796	PARAMOUNT COMMUNICATIONS LTD	INDIA	
23	G156	GEMSCAB INDUSTRIES LTD	INDIA	
24	3602	Special Cables Pvt. Ltd.	INDIA	
25	4302	SHRIRAM TELELINK	INDIA	
26	A132	ASSOCIATED FLEXIBLES & WIRES [P] LTD	INDIA	
27	U015	UDEY PYROCABLES PVT. LTD.	INDIA	
28	3662	ELEGAR KERPEN KABEL INDIA PRIVATE LIMITED	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15EC		**Description :** PRESSURE RELIEF VALVE		
Approved Suppliers				
1	N541	NAKAKITA SEISAKUSHO CO LTD	JAPAN	
2	T181	Anderson Greenwood Crosby Sanmar Limited	INDIA	
3	L569	LESER GMBH & CO. KG	GERMANY	
4	D523	DRESSER INC.	UNITED STATES	
5	F103	LESER INDIA PRIVATE LIMITED	INDIA	
6	N088	NIRMAL INDUSTRIAL CONTROL PVT. LTD.	INDIA	
7	B110	BLISS ANAND PVT LTD	INDIA	
8	A761	AST APPARECCHI DI SICUREZZA E TENUTA SPA	ITALY	
9	A710	ANDERSON GREENWOOD CROSBY	UNITED STATES	
10	C700	CURTISS WRIGHT FLOW CONTROL CORPORATION	CANADA	
11	B015	BHARAT HEAVY ELECTRICALS LIMITED-TIRUCHIRAPALLI	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15GA		**Description :** ORIFICE PLATES & FLANGES		
Approved Suppliers				
1	C201	CHEMTROLS SAMIL (INDIA) PVT LTD	INDIA	
2	T516	TM TECNOMATIC SPA	ITALY	
3	3867	DYNAFLUID VALVES AND FLOW CONTROLS P LTD	INDIA	
4	27512	CANALTA CONTROLS LIMITED	CANADA	
5	S286	STAR-MECH CONTROLS (INDIA) PVT LTD	INDIA	
6	3648	HYDROPNEUMATICS PVT. LTD	INDIA	
7	M313	MINCO (I) FLOW ELEMENT P. LTD. (GIC CO.)	INDIA	
8	C220	COMFIT & VALVES PVT. LTD.	INDIA	
9	P514	PETROL VALVES SPA	ITALY	
10	J067	METAVAL ENGINEERING PRIVATE LIMITED	INDIA	
11	T095	TEMP-TECH	INDIA	
12	3936	ADITYA ENGINEERING WORKS	INDIA	
13	E022	EUREKA INDUSTRIAL EQUIPMENTS (P) LTD.	INDIA	
14	G016	GURU NANAK ENGG WORKS	INDIA	
15	M010	WIKA PROCESS SOLUTIONS INDIA PRIVATE LIMITED	INDIA	
16	M045	MINCO (INDIA) PVT LTD (GEN. INST.)	INDIA	
17	D509	EMERSON PROCESS MANAGEMENT ASIA PACIFIC PTE LTD	UNITED STATES	
18	P538	PIETRO FIORENTINI SPA	ITALY	
19	27415	CAMERON CANADA CORPORATION	CANADA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15HD		**Description :** TEMP.ELEMENTS,THERMOWELLS		
Approved Suppliers				
1	P190	PYRO-ELECTRIC INSTRUMENTS GOA PVT LTD	INDIA	
2	A362	PRECISION MASS PRODUCTS PVT. LTD.	INDIA	
3	T146	TEMPSENS INSTRUMENTS INDIA LIMITED	INDIA	
4	D004	DETRIV INSTRUMENTATION & ELECTRONICS LTD	INDIA	
5	A682	ABB AUTOMATION LTD	UNITED KINGDOM	
6	W589	WIKA ALEXANDER WIEGAND & CO GMBH	GERMANY	
7	3638	GAUGES BOURDON (I) PVT LTD (GEN. INST)	INDIA	
8	T516	TM TECNOMATIC SPA	ITALY	
9	D677	DAILY THERMETRICS CORPORATION	UNITED STATES	
10	T241	THERMAL INSTRUMENT (I) P LTD (GEN.INST.)	INDIA	
11	T514	THERMO ELECTRIC CO. INC.	UNITED STATES	
12	T232	TECHNO INSTRUMENTS	INDIA	
13	A206	ALTOP INDUSTRIES LTD.	INDIA	
14	W061	WIKA INSTRUMENTS INDIA PVT LTD	INDIA	
15	3744	TOSHNIWAL INDUSTRIES PVT LTD	INDIA	
16	G622	GAYESCO-WIKA USA, LP	UNITED STATES	
17	B213	BAUMER TECHNOLOGIES INDIA PVT.LTD(W058)	INDIA	
18	T095	TEMP-TECH 056053057051	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15KA		**Description :** PRESSURE GAUGES		
Approved Suppliers				
1	A362	PRECISION MASS PRODUCTS PVT. LTD.	INDIA	
2	W064	WALCHANDNAGAR INDUSTRIES LTD(TIWAC DIVN)	INDIA	
3	B213	BAUMER TECHNOLOGIES INDIA PVT.LTD(W058)	INDIA	
4	G115	GAUGES BOURDON (I) PVT. LTD. (GEN.INST)	INDIA	
5	T241	THERMAL INSTRUMENT (I) P LTD (GEN.INST.)	INDIA	
6	3994	ITEC MEASURES PVT. LTD.	INDIA	
7	F114	FORBES MARSHALL (HYD) PVT. LTD	INDIA	
8	H081	H GURU INSTRUMENTS(SOUTH INDIA)PVT. LTD	INDIA	
9	W061	WIKA INSTRUMENTS INDIA PVT LTD	INDIA	
10	B696	BADOTHERM PROCESS INSTRUMENTS B.V.	NETHERLANDS	
11	W589	WIKA ALEXANDER WIEGAND & CO GMBH	GERMANY	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15LA		**Description :** TEMP.GAUGES(BI METALLIC,FILLED SYSTEM)		
Approved Suppliers				
1	W589	WIKA ALEXANDER WIEGAND & CO GMBH	GERMANY	
2	W064	WALCHANDNAGAR INDUSTRIES LTD(TIWAC DIVN)	INDIA	
3	G115	GAUGES BOURDON (I) PVT. LTD. (GEN.INST)	INDIA	
4	B213	BAUMER TECHNOLOGIES INDIA PVT.LTD(W058)	INDIA	
5	W061	WIKA INSTRUMENTS INDIA PVT LTD	INDIA	
6	T241	THERMAL INSTRUMENT (I) P LTD (GEN.INST.)	INDIA	
7	A362	PRECISION MASS PRODUCTS PVT. LTD.	INDIA	
8	F114	FORBES MARSHALL (HYD) PVT. LTD	INDIA	
9	H081	H GURU INSTRUMENTS(SOUTH INDIA)PVT. LTD	INDIA	
10	3994	ITEC MEASURES PVT. LTD.	INDIA	
11	B696	BADOTHERM PROCESS INSTRUMENTS B.V.	NETHERLANDS	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15OA		**Description :** GAUGE GLASSES & COCKS		
Approved Suppliers				
1	C201	CHEMTROLS SAMIL (INDIA) PVT LTD	INDIA	
2	P239	PUNE TECHTROL PVT LTD	INDIA	
3	K637	KLINGER SPA	ITALY	
4	J543	JERGUSON GAUGE & VALVE	UNITED STATES	
5	B110	BLISS ANAND PVT LTD	INDIA	
6	3638	GAUGES BOURDON (I) PVT LTD (GEN. INST)	INDIA	
7	S036	SIGMA INSTRUMENTS CO	INDIA	
8	N520	NIHON KLINGAGE CO LTD	JAPAN	
9	N141	NISAN SCIENTIFIC PROCESS EQUIP. P LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15OF		**Description :** MAGNETIC LEVEL INSTRUMENTS		
Approved Suppliers				
1	S148	SHRIDHAN AUTOMATION PVT LTD	INDIA	
2	3638	GAUGES BOURDON (I) PVT LTD (GEN. INST)	INDIA	
3	V047	V AUTOMAT & INSTRUMENTS PVT LTD	INDIA	
4	C201	CHEMTROLS SAMIL (INDIA) PVT LTD	INDIA	
5	27470	KROHNE S.A.S.	FRANCE	
6	S036	SIGMA INSTRUMENTS CO	INDIA	
7	P239	PUNE TECHTROL PVT LTD	INDIA	
8	B110	BLISS ANAND PVT LTD	INDIA	
9	C015	CHEMTROLS INDUSTRIES PVT. LTD.	INDIA	
10	3977	WIKA INSTRUMENTS INDIA PVT. LTD.	INDIA	
11	K105	KROHNE MARSHALL PVT. LTD	INDIA	
12	N520	NIHON KLINGAGE CO LTD	JAPAN	
13	A759	ABB INC (FORMLY K622)	UNITED STATES	
14	K637	KLINGER SPA	ITALY	
15	M508	MAGNETROL INTERNATIONAL N.V	BELGIUM	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15OG		**Description :** SPL. LEVEL INSTRUMENTS-GUIDED WAVE RADAR		
Approved Suppliers				
1	4246	VEGA INDIA LEVEL & PRESSURE MEASUREMENT PVT. LTD.	INDIA	
2	27470	KROHNE S.A.S.	FRANCE	
3	4129	EMERSON PROCESS MANAGEMENT INDIA PVT LTD	INDIA	
4	M508	MAGNETROL INTERNATIONAL N.V	BELGIUM	
5	E657	ENDRESS+HAUSER SE+CO. KG	GERMANY	
6	L562	L & J TECHNOLOGIES	UNITED STATES	
7	V518	VEGA GRIESHABER KG	GERMANY	
8	E232	ENDRESS+HAUSER (I) AUTO. INSTR. PVT. LTD	INDIA	
9	A759	ABB INC (FORMLY K622)	UNITED STATES	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15RA		**Description :** LOOP POWERED INDICATORS		
Approved Suppliers				
1	3615	ENDRESS + HAUSER WETZER INDIA PVT LTD	INDIA	
2	B713	BEKA ASSOCIATES LTD	UNITED KINGDOM	
3	Y006	YOKOGAWA INDIA LIMITED	INDIA	
4	4129	EMERSON PROCESS MANAGEMENT INDIA PVT LTD	INDIA	
5	E641	ENDRESS+HAUSER WETZER GMBH+ CO.KG	GERMANY	
6	M154	MTL INSTRUMENTS PVT LTD	INDIA	
7	H150	HONEYWELL AUTOMATION INDIA LTD.	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15RD		**Description :** FIELD INSTRUMENTS (P,DP,F,L,T,TD)		
Approved Suppliers				
1	Y006	YOKOGAWA INDIA LIMITED	INDIA	
2	E641	ENDRESS+HAUSER WETZER GMBH+ CO.KG	GERMANY	
3	4353	ABB INDIA LIMITED	INDIA	
4	Y501	YOKOGAWA ELECTRIC CORPORATION	JAPAN	
5	F644	FUJI ELECTRIC SYSTEMS CO. LTD	JAPAN	
6	3615	ENDRESS + HAUSER WETZER INDIA PVT LTD	INDIA	
7	H621	HONEYWELL INC.	UNITED STATES	
8	4129	EMERSON PROCESS MANAGEMENT INDIA PVT LTD	INDIA	
9	E657	ENDRESS+HAUSER SE+CO. KG	GERMANY	
10	A682A	ABB AUTOMATION PRODUCTS GMBH	GERMANY	
11	H150	HONEYWELL AUTOMATION INDIA LTD.	INDIA	
12	E232	ENDRESS+HAUSER (I) AUTO. INSTR. PVT. LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15UA		**Description :** CONTROL PANEL & ACCESSORIES		
Approved Suppliers				
1	3626	CONTROL SYSTEMS ENGINEERS	INDIA	
2	A212	ACCUSONIC CONTROLS PVT LTD	INDIA	
3	4138	PREI POLAR ENGINEERING PVT LTD	INDIA	
4	4343	FOX SOLUTIONS PVT LTD	INDIA	
5	3902	PREI POLAR ENGINEERING PVT LTD	INDIA	
6	D129	SIEMENS ENERGY INDUSTRIAL TURBOMACHINERY INDIA PRIVATE LIMITED	INDIA	
7	R084	RADHA KRISHNA CONTROLS	INDIA	
8	E184	ELECTRONIC INSTRMNTATION & CONTROL P LTD	INDIA	
9	I010	INDUSTRIAL CONTROLS & APPLIANCES PVT LTD	INDIA	
10	I206	IRIS AUTOMATION PVT LTD	INDIA	
11	P134	POSITRONICS PVT LTD	INDIA	
12	P213	PRIMA AUTOMATION INDIA PVT LTD	INDIA	
13	P214	PYROTECH ELECTRONICS PVT LTD	INDIA	
14	E004	ELECTRONIC CORPORATION OF INDIA LTD.	INDIA	

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CENTRIFUGAL PUMPS

DATE	STATUS	SPNSR	APVD
16JUN20	Reaffirmed	MRV	PFD

1. GENERAL

1.1 Scope

a. This Standard Specification covers the design of American Petroleum Institute (API) Standard 610, Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries, single stage overhung, between bearing, multi-stage, and high speed integral gear pumps, and hydraulic power recovery turbines.

b. Exceptions or variations shown in the UOP Project Specifications take precedence over requirements shown herein.

1.2 References

Unless noted below, use the edition and addenda of each referenced document current on the date of this Standard Specification. When a referenced document incorporates another document, use the edition of that document required by the referenced document.

a. American Petroleum Institute (API) Standard 610, “Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries”

b. API Standard 613, “Special Purpose Gear Units for Petroleum, Chemical and Gas Industry Services”

c. API Standard 677, “General Purpose Gear Units for Petroleum, Chemical and Gas Industry Services”

d. American Society for Testing and Materials (ASTM), A 193, A 194, A 216, A 494, B 865

e. American Society of Mechanical Engineers (ASME) B16.5, “Pipe Flanges and Flanged Fittings, NPS ½ through NPS 24 Metric/Inch Standard”

f. ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Pressure Vessels

g. ASME B46.1,” Surface Texture (Surface Roughness, Waviness, and Lay)”

h. Standards of the Tubular Exchanger Manufacturers Association (TEMA)

i. National, state, and local governmental regulations and laws

2. DESIGN

This standard is intended to be used as an addendum to API Standard 610. Numbering in this section coincides with actual paragraph numbers from API Standard 610. 11th Edition.

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6.1 General

Paragraph 6.1.1, Addition/Clarification

Centrifugal pumps shall comply with the requirements of API 610, except where modified by the UOP Project Specification(s).

Vendor's offering shall be a size and design which has a successful record of proven field service at operating conditions similar to those specified (proto-types are not acceptable). An installation list shall be submitted upon request.

Paragraph 6.1.3, Addition

Single and two-stage pumps operating at temperatures less than 300°F (150°C) and multi-stage pumps operating at temperatures less than 200°F (93°C) shall be suitable for instantaneous startup from ambient to full operating temperature.

For higher operating temperatures the vendor shall provide as part of the operating manual a suitable startup procedure and any required monitoring equipment (i.e., skin thermocouples) to assure that the pump, including seal(s), does not incur damage due to rapid heat up.

Paragraph 6.1.8, Addition

UOP requires an NPSH margin of 2 feet (0.6 meters) or 15% of the NPSH required, whichever is greater. This margin is included in the system calculations. It is not included in the NPSH available reported in the data sheets. The pump NPSH required must be less than or equal to the NPSH available reported in the data sheets.

Inducers are not permitted, except for API 610 pump type OH6.

Paragraph 6.1.9, Addition

The suction specific speed shall not exceed 11,000 (USGPM, ft.), 13000 (M3/hr, meters).

The suction specific speed of pumps over 100 HP (75 kW) per stage in water, or aqueous solution over 50% water, services shall not exceed 9500 (USGPM, ft.), 11000 (M3/hr, meters).

Suction specific speeds of up to 24000 (USGPM, ft) are acceptable for high speed integrally gear driven type pumps (Pump type OH6)

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Paragraph 6.1.11, Addition

Pumps shall have stable head/capacity curves which continuously rise to minimum continuous flow.

Paragraph 6.1.28, Clarification

Pumps shall be designed to operate in a totally unprotected, outdoor environment.

Paragraph 6.1.35, New

Pumps shall be designed for continuous operation at a minimum of 50°F (28°C) higher than specified maximum operating temperature.

6.3 Paragraph 6.1.36, New

Paragraph 6.3.1, Addition

Contractor to verify that downstream equipment, piping, and instrumentation design pressures are adequate for the actual shutoff pressure of purchased pumps.

The design pressure of downstream equipment was established by UOP based on *estimated* pump shutoff pressure. Pump shutoff pressure was estimated as follows:

a. Fixed speed motor driven pumps

Est. Shutoff Pressure = $P_{max.\ suction} + 1.25*(\Delta P_{rated})$.

b. Steam turbine driven pumps

Est. Pump Shutoff Pressure = $P_{max.\ suction} + 1.38*(\Delta P_{rated})$

NOTE: The rated pump differential is based on pumped fluid maximum specific gravity.

6.4 Nozzles and Pressure casing Connections

Paragraph 6.4.2.3, Addition

Flange classes are specified in accordance with ASME B16.5. Flange classes listed in the UOP Project Specifications are based upon design pressure and temperature conditions only, and do not account for other loads. The final design of all flanges shall account for gasket seating and external loads. Differential thermal expansion of dissimilar joints and transient thermal conditions such as start-up/shutdown and operational upset shall be accommodated.

Flanges intended for use with spiral wound gaskets shall have a flange surface finish of 125 microinch Ra minimum to 250 microinch Ra maximum. Flanges intended for

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use with other gaskets shall have a flange surface finish within the optimal range for the specified gasket. Finishes shall be judged by visual comparison with surface finish roughness standards conforming to ASME B46.1. Flange finishes shall be protected from damage during fabrication, heat treatment, shipping, storage, and installation.

6.7 Wear Rings and Running Clearances

Paragraph 6.7.4, Addition

When non-metallic wear ring materials are specified, the pump vendor shall state in his proposal the minimum diametral clearances when the values are less than API Standard 610 Table 5.

6.8 Mechanical Shaft Seals

Paragraph 6.8.4, New

A dial type thermometer shall be provided when a seal flush cooler is provided.

Vent and drain connections from the mechanical seals shall be piped to a safe area.

Pumps in water service shall be designed so that the water temperature at the seal face does not exceed 180°F (82°C).

A non-sparking fixed throttle bushing shall be provided for Category 1 Arrangement 1 seals.

A non-sparking fixed throttle bushing shall be provided for Category 2 Arrangement 1 and Arrangement 2 seals (when seal chamber dimensions permit).

6.10 Bearings and Bearing Housings

Paragraph 6.10.2.6, Addition

Pumps with bearing housings lubricated by open or closed loop, pure oil mist shall use Inpro Type OM-32 bearing isolators or equal, as a minimum.

Paragraph 6.10.2.11, Clarification

Pumps with anti-friction bearings shall have a flat surface at least 1” (25 mm) in diameter for the location of magnetic based vibration measuring equipment.

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7.2 Couplings and Guards

Paragraph 7.2.2.a, Addition

Disc coupling flexible discs shall be a 300 series stainless steel, except for applications in a wet atmosphere in the presence of chlorides, where a material resistant to chloride stress corrosion cracking shall be used.

7.5 Piping and Appurtenances

Paragraph 7.5.2.6, Addition

Fluid passages within the pump shall be arranged for complete drainage where practical.

The vendor shall provide 3/4" minimum drain piping with a line size gate valve for each drain.

Drain valves shall be located as close to the pump as practical and still be accessible.

Paragraph 7.5.2.8, Addition

Balancing lines for multi-stage pumps shall utilize flanged joints; screwed unions are not acceptable.

Pumps equipped with a tilting shoe thrust bearing shall have a forced feed lubrication system.

7.7 Gears (NEW)

Gears shall comply with API Standard 677 for spared pumping services unless otherwise specified.

Gears shall comply with API Standard 613 for unspared pumping services.

Gears for high speed integrally geared type pumps (OH6) may be produced to manufacturer's standard.

7.8 Oil Coolers (NEW)

Tubes for fresh water service shall be inhibited admiralty.

If ammonia or hot sulfides are present, 70-30 Cu-Ni or titanium only tubes shall be used.

For sea water or brackish water services the tubes shall be aluminum-brass, 90-10 Cu-Ni, 70-30 Cu-Ni, or titanium.

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When a steel channel without non-ferrous cladding or weld overlay is used in sea or brackish water service, the surface of the steel channel shall be faced and coated as follows:

(1) A weld deposited machined facing of aluminum bronze, Monel, or Cu-Ni shall be applied to the contact edges of the partition plates at the tubesheet sides and the face of the channel flange which is adjacent to the tubesheet. These weld deposits shall extend at least 1 inch (25 mm) back from the tubesheet contact surface.

(2) Install sacrificial zinc anodes in the channel of exchangers in water service. Anodes shall be of sufficient size for four years of continuous operation.

(3) All steel surfaces, including nozzles and supports and excluding the zinc anodes, shall be painted with a primer coating.

(4) ¼" OD tubes are acceptable for lube oil coolers for high speed integrally geared type pumps.

8.3 Testing

Paragraph 8.3.4.3.1, Decision

NPSH Required Test is required when the NPSHA does not exceed the predicted NPSHR at rated flow by 2 feet (0.60 meters)

9.1 Single-Stage Overhung Pumps

Paragraph 9.1.1.3, Decision / Addition

The shaft flexibility index shall be calculated in accordance with Annex K.1 and reported in pump vendor's proposal.
The value of the overhung pump shaft flexibility, $I_{SF,}$ for the given pump size factor, K_t shall not exceed 1.2 times the equation K.4 (SI units) or K.5 (US units).

ANNEX H

Table H.4 note a, Exception

All piping between the casing and the drain valve shall be Schedule 160.

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उपकेन्द्रीय पम्पों के लिए मानक विनिर्देश विशिष्ठ प्रयोजन प्रक्रिया पम्प

[एपीआई-६१०,१२वें संस्करण पर आधारित]

STANDARD SPECIFICATION FOR CENTRIFUGAL PUMPS (SPECIAL PURPOSE PROCESS SERVICE)

[BASED ON API-610, 12TH EDITION]

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
					Approved by	
0	31.07.2023	Issued as Standard Specification	HM	MG/TK	NK	SM

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Abbreviations:

API	:	American Petroleum Institute
ARV	:	Automatic Recirculation Valve
ASME	:	The American Society of Mechanical Engineers
BDD	:	Bid due date/Tender due date
BEP	:	Best Efficiency Point
BLO	:	Balance Leak off
DCI	:	Document Control Index
EC	:	Experience Criteria
eDMS	:	Electronic Document Management System
FFT	:	Fast Fourier Transform
HPRT	:	Hydraulic Power Recovery Turbine
ISA	:	Instrumentation Society of America
ISBL	:	Inside Battery Limits
MAWP	:	Maximum Allowable Working Pressure
MCF	:	Minimum Continuous Flow
MCR	:	Maximum Continuous Rating
MCS	:	Maximum Continuous Speed
MKS	:	Meter, Kilogram, Seconds
MMS	:	Machine Monitoring System
MOP	:	Main Oil Pump
MRT	:	Mechanical Run Test
NPSH	:	Net Positive Suction Head
NPSHA	:	Net Positive Suction Head Available
NPSHR	:	Net Positive Suction Head Required
NPSH3	:	Net Positive Suction Head 3%
OSBL	:	Outside Battery Limits
P&ID	:	Piping and Instrumentation Diagram
PTC	:	Power Test Codes
PTR	:	Proven Track Record
VDM	:	Vendor Document Management System
VDR	:	Vendor Data Requirements
VMS	:	Vibration Monitoring System

Rotating Equipment Standards Committee

Convener: Mr. Nalin Kumar

Members:
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Mr. Mahesh Easwaran
Mr. Mahesh Gupta
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1 Scope

i. This specification together with the attendant Data Sheets and other specifications/attachments to inquiry / order defines the minimum requirements for vertical and horizontal centrifugal pumps including pumps running in reverse direction as hydraulic power recovery turbines and their accessories / auxiliaries for use in the petroleum, petrochemical and natural gas industries.

ii. Vendor shall comply with the requirement of this specification and other specifications/attachments to inquiry/order. No deviation or exception shall be permitted without the written approval of the purchaser.

iii. Compliance with this Specification shall not relieve the vendor of the responsibility of furnishing equipment and accessories /auxiliaries of proper design, materials and workmanship to meet the specified start up and operating conditions.

In case the vendor considers requirement of additional instrumentation, controls, safety devices and any other accessories/auxiliaries essential for safe and satisfactory operation of the equipment, they shall recommend the same along with reasons in a separate section along with his proposal and include the same in their scope of supply.

1A Amendments / Supplements to API Standard 610

1A.1 Except as modified herein, the centrifugal pumps shall be designed, manufactured, tested and supplied strictly in accordance with the **API Standard 610 - Centrifugal Pumps for Petroleum, Petrochemical and Natural gas industries, Twelfth Edition, January 2021**.

1A.2 Except for new paragraphs, the number and title of the paragraphs in this specification correspond to the respective sections and paragraphs of the above standard. Paragraphs not addressed in this specification shall be strictly in accordance to **API Standard 610, Twelfth Edition, January 2021** requirements.

The word in parenthesis following the number or title of a paragraph indicates the following:

(Addition)	:	An addition to a part, section or paragraph referred to.
(Modification)	:	An amplification or rewording has been made to a part of the corresponding section or paragraph but not a substitution replacing the entire section or paragraph.
(Substitution)	:	A substitution has been made for the corresponding section or paragraph of the standard in its totality.
(New)	:	A new section or paragraph having no corresponding section or paragraph in the Standard.
(Delete)	:	The paragraph is deleted.

1B Experience Criteria

1B.1 The pump model offered shall be from the existing pump model series and shall be from the regular manufacturing range of the vendor (Prototypes are not acceptable).

The mechanical design as well as the hydraulic performance (including NPSHR/NPSH3) for the complete range of operation of the offered model shall have been established in the shop test. (Details to be furnished, if required).

The offered pump model with identical hydraulics and design shall be field proven (at least ONE unit) with minimum operating experience of one year for similar operating/design conditions & driver rating (at rated pump speed), rotor dynamics, mechanical design, pumping liquid and material of construction, supplied in the last Ten (10) years, from the

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proposed manufacturing plant, as on BDD.
(Note: Similar operating/design conditions& driver rating would mean approx. 80% or higher; Pumping liquid and material of construction would mean references in the same model series, are also acceptable.)

1B.2 The vendor shall complete the Experience Record Proforma enclosed with the inquiry document to amply prove that the offered pump model meets the above criteria by furnishing details of similar operating/design conditions {flow, head, operating/design pressures & temperatures, viscosity, speeds, efficiencies, driver rating, no. of stages, bearing span/column length etc.}, Rotor Dynamics {Impeller Arrangement, No. of Impellers, Bearing Span, Speeds etc.}, Mechanical Design {Bearing Type & Lubrication, MAWP etc.}, pumping liquid & material of construction etc. as applicable in the format.

Past Test Curves shall also be submitted (when requested) to justify the quoted efficiencies. Multiple references may be furnished to justify the above.
In addition, manufacturer's catalogue and general reference list for "Centrifugal Pumps-Special Purpose Process Service" shall also be furnished along with the proposal.

1 Scope

Paragraph 1 of **API Standard 610 - Centrifugal Pumps for Petroleum, Petrochemical and Natural gas industries, Twelfth Edition, January 2021** stands modified as per para 1, para 1A and para 1B above.

3 Terms and Definitions

3.1.21 Maximum Allowable Working Pressure (Addition)

MAWP shall not be less than maximum discharge pressure calculated as per 3.1.23 below and must satisfy the pressure and temperature parameters consistent with the discharge flange rating upto 600#.
For higher pressure rating pumps (900# and above), MAWP shall not be less than downstream design conditions as a minimum.

3.1.23 Maximum Discharge Pressure (Modification)

- Replace 'relative density' by 'maximum specified relative density at any specified operating condition' (including start-up/commissioning with water, if specified).
- Highest Pressure shall include all test tolerances for shut off head.

3.1.64 Supplier / Vendor (Substitution)

Unless otherwise specified, **Supplier / Vendor** shall be the manufacturer of centrifugal pumps (special purpose), as per API 610, having adequate design, engineering, manufacturing, packaging and testing facilities and shall have supplied similar centrifugal pumps (special purpose) package as a single point responsibility vendor. The vendor shall also be the manufacturer of the proposed centrifugal pumps (special purpose).

4 General

4.1 Unit Responsibility (Substitution)

Vendor shall have UNIT RESPONSIBILITY of complete centrifugal pump package & shall be responsible for complete design, engineering, manufacturing, packaging, testing, supply & supervision of erection & commissioning of total package as per specification requirements. Vendor's scope shall include but not limited to the responsibility for execution, coordination of all technical aspects of equipment and its auxiliary systems, their selection & integration into a complete package constituting total order. All drawings/documents, including sub vendor's drawings, pertaining to the order shall be duly reviewed &approved by the vendor before onward submission.

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4.2.2 Unless otherwise specified OH1, OH4, OH5, BB4, VS3, VS5 & VS7 type pumps are not acceptable.

5 Requirements

5.1 Units (Modification)
Unless otherwise specified, MKS system of units shall be used.

5.3 Hierarchy of Requirements (Substitution)
In case of conflict between this specification and the attendant data sheets, job specifications (if any) and other attached specification the following order of precedence shall govern:

1. Process Data Sheet / P&IDs / Process Package
2. Mechanical Data Sheets.
3. Job Specifications/scope of work (if any)
4. This specification
5. Other standards & specifications
6. Other referred codes and standards

The editions of referenced publication that are in effect at the time of inquiry or at a date specified in the inquiry documents shall be applicable.

In case of any ambiguity in the above documents, the vendor/supplier shall seek clarification from the owner/purchaser and the decision of the owner/purchaser shall be final and binding.

6 Basic Design

6.1 General

6.1.4 (Addition)
Unless otherwise specified, pump minimum continuous flow (MCF) shall be less than or equal to process normal flow for cases wherein addition of MCF to process flow is not specified in process data sheet. Pumps having MCF greater than Process Normal Flow are not acceptable.

6.1.5 (Modification)
The words "different hydraulic design, variable speed capability" stands deleted.

6.1.9 (Addition)
Unless otherwise specified, pumps where difference between NPSHA and NPSHR/NPSH3 from quoted minimum flow to rated flow is less than 0.6 meter are not acceptable. The said NPSHR/NPSH3 value shall correspond to the maximum value of NPSHR/NPSH3 from rated flow down to the recommended minimum continuous stable flow specified by the vendor. Additionally, in case of parallel operation and/or auto start against open discharge valve condition, NPSHR/NPSH3 upto 120% of best efficiency point shall not exceed specified NPSHA.

Pumps (except for OH6 type pumps) fitted with inducers/coke crusher for reducing NPSHR/NPSH3 is not acceptable.
Note: Actual datum for NPSHA (i.e. grade level, top of foundation level or any other level as defined in enquiry) shall be referred from the data sheets forming part of enquiry document.

6.1.14 (Substitution)
Unless otherwise specified, discharge orifice shall not be used to achieve required head rise to shut off, even in case of parallel operation.

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For discharge nozzle size less than 2-inch, reduced bore design, if used, shall be clearly highlighted in the proposal (pump datasheet/performance curve) and may be considered with prior experience of hydraulics.

6.1.15 (Substitution)
Pumps shall have stable head/flow-rate curves (continuous head rise from rated to shutoff) for all applications (except for pumps permitted as per Cl. 8.3.3.4.2 of API 610 wherein continuous head rise from rated to MCF is required).

If parallel operation is specified, the head rise from rated point to shutoff shall be at least 10%.

For all other pumps, minimum 5% head rise from rated to shut-off shall be provided in order to ensure stable pump operation.

6.1.16 (Substitution)
Pumps shall have preferred operating region of 70% to 120% of best efficiency flow-rate of the pump as furnished. Rated flow shall be within 70% to 110% of best efficiency flow-rate of the rated impeller except for low flow pumps ($\leq$ 20 m3/hr) or pump rated BKW upto 15 kW. The "end of the curve flow" is defined as 120% of the BEP flow. Vendor shall indicate "Preferred Operating Range" and "Allowable Operating Range" on the characteristic curve.

6.1.19 (Substitution)
The NOTE at end of Cl. 6.1.19 is substituted with the following clause:
Unless otherwise specified, the maximum permissible sound pressure level of the complete equipment (pump + driver) train including all ancillaries & auxiliaries shall not exceed 85 dBA measured at 1 meter from equipment surface in any direction for the recommended range of operation at site.

6.1.22 (Modification)
Unless otherwise specified, vendor shall offer their standard cooling plan (as per API Annex B) guaranteeing safe and satisfactory operation of the pump package.

The need for cooling shall be determined by the vendor, and the method shall be agreed upon by the purchaser. However water cooling shall be provided to bearing housing for all pumps with fluid temperature greater than 250°C operating in ISBL areas.

6.1.27 (Modification)
Unless otherwise specified, water cooling systems (jackets, heat exchangers and so forth) shall be designed for the following conditions on the water side:

Velocity over heat exchanger surface	:	1.5 - 2.5 m/sec.
Maximum Allowable Working Pressure (MAWP)	:	$\geq$ 8.0 kg/cm^{2}g
Test Pressure	:	= 1.5 x MAWP
Maximum Pressure Drop	:	0.7 kg/cm^2
Maximum Inlet Temperature	:	33°C
Maximum Outlet Temperature	:	45°C
Maximum Temperature Rise	:	12°C
Minimum Temperature Rise	:	6°C
Fouling Factor on Water Side	:	0.0004 m^2 hr°C/kcal
Shell Side Corrosion allowance (not for tubes)	:	3.2 mm

Note: TSV set pressure (in CW isolatable circuits) shall not exceed the design pressure of purchaser's CW header.

6.1.36 (Addition)
Unless otherwise specified, equipment shall be designed to be suitable for outdoor installation without a roof.

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6.1.42 (New)
For balancing axial thrust in multi-stage pumps, only the following arrangements shall be used:
- Opposed arrangements of impellers.
- A balancing piston

6.1.43 (New)
Unless otherwise specified, for rated flows exceeding 1000 m^3/hr or with differential head above 200 m, only "Between Bearing Type" pump shall be supplied. For offsites/OSBL, pumps falling in this range shall be selected with Side Suction/Top Discharge or Side Suction/Side Discharge nozzle orientation.

6.1.44 (New)
Unless otherwise specified, electric motor driven pumps shall be directly driven.

6.1.45 (New)
Single and two-stage pumps operating at temperatures less than 150°C and multi-stage pumps operating at temperatures less than 120°C shall be suitable for instantaneous start-up from ambient to full operating temperature without any warm-up.
For operating temperatures higher than the above, unless otherwise specified, the pump vendor shall provide casing warm-up arrangement with suitable hardware (i.e. flanged piping, valves, orifice & fittings as applicable) within pump skid battery limits.
Warm up flow shall be added to the rated flow for pump/driver sizing and selection and the same shall be reflected on data sheet and performance curves. Flanged warm-up connection shall be provided at the skid edge for the further interfacing by purchaser.
Casing warm up schematic shall be provided by pump vendor.
As part of the operating manual, an appropriate start-up procedure shall be provided by pump vendor.
Required sensing/monitoring equipment (i.e. skin thermo-couples, temperature transmitters etc.) to ensure that the pump, including seal(s), does not incur damage due to rapid heat up, shall be supplied by pump vendor.

6.2 Pump Types (Modification)
Unless otherwise specified, pump types as listed in Table 3 shall not be offered.

6.3 Pressure Casings

6.3.1 (Substitution)
The maximum discharge pressure shall be the maximum suction pressure plus the maximum differential pressure including all test tolerances, the pump is able to develop, when operating with the furnished impeller at the rated speed (MCS for pumps equipped with variable speed drivers) and specified maximum relative density at any specified operating condition' (including start-up/commissioning with water at normal suction pressure, if specified).

6.3.3 (Modification)
The 'NOTE' stands modified as under:
Vendor to note that the criteria specified in a) above shall also be used for design of purchaser's associated piping system.

6.3.6 (Modification)
MAWP shall be calculated as per 3.1.21 defined in this specification.

6.3.8 (Modification)
Unless otherwise specified, regions of VS6, OH6, BB3 & BB5 that are subjected only to suction pressure shall be designed for the same MAWP as that of discharge section.

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6.3.13 (Modification)
The second line "Gaskets other than spiral-wound may be proposed and furnished, if proven suitable for service and approved by the purchaser" stands deleted.

6.3.14 (Modification)
The words "except as allowed in 9.2.1.2" stand deleted.

6.4 Nozzles and pressure casing connections

6.4.3 **Auxiliary connections**

6.4.3.1 (Addition)
All drain and vent connections shall be terminated at the skid edge along with instructions that the same are to be further connected to either an open drain or a closed drain.

6.4.3.11 (New)
For horizontal multistage pumps, In case, Balance-leak-off (BLO) line is connected to suction source (piping / vessel) of the pump, the balance line shall be provided with pressure gauge, orifice & pressure relief valve upto vendors battery limit. Vendor shall ensure that BLO flow has already been considered in pump & driver sizing and the rated capacity is available from pump discharge. Screwed connections are not allowed. Balance leak off line shall be designed for the pump casing MAWP.

6.5 External Nozzle Forces and Moments

6.5.1 (Modification):
The pump's pressure casing and their base-plates shall be suitable to withstand twice the forces and moments in Table 5 applied simultaneously to the pump through each nozzle, plus internal pressure, without distortion that would impair operation of the pump or seal.
Note:
1. Vendor to note that the above criteria shall be used for design of purchaser's associated piping system.
2. Annex F of API 610 may be utilised for pumps with Automatic Recirculation Valve (ARV) mounted on the pump discharge nozzle.

6.7 Wear Rings and Running Clearances

6.7.3 (Modification)
Tack welding shall not be employed for fitting of the metallic wear rings.

6.7.4 (Addition)
In order to ensure close clearances between impeller wear ring and casing wear ring and to achieve improved efficiency, following Non-Metallic wear rings shall be used for all clean applications within the design temperature limitations as per Table H-3:
a) Polyether Ether Ketone (PEEK) Continuous –Carbon-Fibre wound
b) PFA/CF Carbon-fiber Filled 20% mass fraction random X-Y oriented carbon-fibre
Offered Non-metallic wear ring material shall be field proven and certified compatible with the specified process liquid. A letter from the wear ring material manufacturer shall be furnished in the bid certifying compatibility of offered wear ring material with the process liquid and operating and design conditions.

6.7.5d) (New)
The maximum permissible running clearances shall not be less than twice the new running clearances.
Note: While selecting the running clearances, galling tendency of the offered wear rings shall be taken into consideration.

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6.8 Mechanical Shaft Seals

6.8.1 (Addition)
For the applicable flushing plans, the vendor shall also include in his scope of supply, all items shown as optional items in Annex-G of API 682 4th edition (Standard Flush Plan and auxiliary Hardware) along with other additional specified/ required items, if any.

6.9 Dynamics

6.9.2 TORSIONAL ANALYSIS

6.9.2.9 (Modification)
Replace the words 'If specified' by 'If torsional analysis is performed'.

6.10 Bearings and Bearing Housings

6.10.2 BEARING HOUSINGS

6.10.2.9 (Modification)
Bearing housings shall be equipped with suitable replaceable noncontact type bearing isolators where shaft passes through the housing.

6.10.2.13 (Substitution)
All multistage pumps without forced feed lubrication system and driver rating >=160 Kw shall be provided with accelerometer based transducers in X&Y directions.

6.10.2.14 (Substitution)
A flat surface at least 25 mm in diameter shall be supplied for the location of magnetic based vibration measuring equipment, whether or not vibration measuring equipment is included in the vendor's scope of supply. Pumps shall also have provision for mounting accelerometers (X & Y) on each bearing housing.

6.10.2.16 (New)
Bearing housing shall be equipped with magnetic drain plug except for multistage pumps where vendor's standard design may not permit this.

6.11 Lubrication

6.11.3 (Substitution)
Provision shall be made for pure/purge oil mist lubrication as specified.

6.12 Materials.

6.12.1.8 (Modification)
The words 'if specified' stand deleted.

6.12.1.13 (Modification)
Where even trace quantities of wet H2S are indicated to be present, reduced hardness materials in accordance with NACE MR0175/MR0103 shall be provided by the vendor.

6.12.2.5 (Modification)
The words 'if specified' stand deleted.
The second sentence also stands deleted.

6.12.3.4.1 (Modification)
Requirements of additional examination shall be as specified vide clause 8.2.1.3 of this specification.

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6.12.4.3 (Modification)
ASME Sec VIII, Div 1 shall apply with regard to impact testing requirements.

7 Accessories

7.1 Drivers

7.1.5 (Substitution)
Electric motor drivers shall have a maximum continuous rating (MCR) (i.e. service factor equal to 1) not lower than the following unless higher rating is dictated by the Note 1 and / or Note 2:

Pump Rated BKW*		**Motor MCR (% of Pump Rated BKW)**
Up-to 22 kW	:	To suit maximum BKW indicated on pump data sheet or 125% of rated pump BKW, whichever is higher.
22 kW to 55 kW	:	115%
Higher than 55 kW	:	110%

* including all mechanical & transmission losses & with 0% +ve tolerance.

The electric motor shall be suitable for the electrical area classification specified on the data sheet.

Note:

1. The motor nameplate rating for pumps under parallel operation or for pumps with auto-start operation shall not be less than the max. BKW indicated on pump data sheet (maximum power at any point on the pump performance curve from shutoff to end of the curve for the rated impeller) or shall have the specified margin as per this clause whichever is greater. The pump motors shall also be suitable for start-up under open discharge valve condition.
2. The motor nameplate rating for applications where the specific gravity of pumped fluid is less than 1.0 shall either be 100% of the BKW of pump at minimum continuous stable flow with clean cold water of sp. gravity 1.0 or shall have the specified margin as per this clause, whichever is greater.

7.1.10 (Modification)
Unless otherwise specified, steam turbine drivers shall be sized to deliver continuously 110% of pump rated power at minimum inlet and maximum exhaust steam conditions.

The steam turbine rating (with minimum inlet and maximum exhaust steam conditions) for pumps under parallel operation or for pumps with auto-start operation shall not be less than the max. BKW indicated on pump data sheet (maximum power at any point on the pump performance curve from shutoff to end of the curve for the rated impeller). The turbine shall also be suitable for start-up under open discharge valve condition.

In any case, Turbine Rating shall be at least equal to the Motor Rating of the standby pump.

7.2 Couplings and Guards

7.2.2(g) (Substitution)
Couplings shall be balanced to ISO 21940-11, grade G2.5.

7.2.3 (Addition)
The coupling service factor shall not be less than 1.5 over the driver rating. However, during selection of coupling, vendor to ensure that the maximum service factor (actual SF) for the coupling shall not exceed the allowable stresses of the drive train. Further, for the pumps equipped with gear box, max service factor for coupling shall not exceed the gear box service factor.

7.2.4 (Substitution)

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Unless otherwise specified, all couplings required for multistage pump package(s) (greater than two stages) shall conform to API standard 671 where either the driver rating is greater than 160 kW or the maximum continuous speed is greater than 3000 rpm.
However in case of gear box driven multistage pump units, both low speed and high speed couplings shall conform to API standard 671 if any of the above criteria of speed or power is satisfied.

7.3 Guards

7.3.2a) (Addition)
Coupling guard shall be open at the bottom to permit manual shaft rotation.

7.3.2d) (Modification)
Coupling guard shall be fabricated from non-sparking material.

7.4 Base Plates

7.4.1 (Addition)
Pumps in corrosive service shall have provision to collect and drain the leakage from mechanical seal or packing, through a drip pan of metallurgy equivalent or superior to pump casing. Leakages from drip pan shall be piped to base-plate with a flanged connection for onward disposal by purchaser. Where the design of bearing prohibits provision of drip pan, the material of bearing bracket shall be suitable for the corrosive service. Base plates shall have jacking provision for aligning the prime movers & shall be provided with 2" 150# flanged connection.

7.4.6 (Deletion)
This clause shall stand deleted.

7.4.8 (Modification)
Replace "if specified" by "For all multistage pumps".

7.4.22 (Modification)
The pump manufacturer shall furnish the anchor bolts.

7.4.24 (Modification)
All pumps offered shall have been tested for nozzle load test (either by physical testing or by computer simulation study using finite element analysis) in the past for twice the API loads meeting shaft deflection criteria as per Table-13 for baseplate intended for grouting limits and shall be demonstrated through the past test reports for the offered model. Categorical compliance to the above is mandatory and report may be furnished on demand.

In case pipe load test has not been conducted in the past, the vendor shall demonstrate the pipe load test with the above defined loads & shaft deflection as per Table-13 (either by physical testing at their manufacturing shop or by computer simulation study using finite element analysis) for the proposed pump model(s). Unless otherwise specified, this is not a witness test and only report is required.

7.4.25 (New)
Skid layout of pump trains along-with their auxiliary systems (i.e. seal flushing plans) shall be designed in a manner so as to ensure that there is enough space within the skid for maintenance and operation. Special care shall be taken for pumps provided with seal flushing plans 23, 52, 53, 75, etc., so that couplings and seals can be attended for maintenance without disturbing any seal piping/cables/other items located on the skid. As far as possible, area on motor terminal box and coupling side shall be left clear of all piping and accessories for ease of maintenance.

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7.5 Instrumentation

7.5.2.2 (Modification)
The words 'if specified' stand deleted. The vendor shall supply the detectors.

7.5.2.5 (Modification)
The words 'if specified' stand deleted.

7.5.2.6 (Modification)
The words 'if specified' stand deleted.

7.5.2.8 (New)
Horizontal multistage pumps intended for pumping temperature above 120°C shall be provided with pump casing skin temperature monitoring system consisting of the following:
- Four thermocouples for number of stages $\geq$ 4& minimum two thermocouples for number of stages < 4, along-with yoke mounted temperature transmitters with integral indicator for each thermocouple.
- One Junction Box (JB) to be mounted on the pump base-plate.
- Cables between the thermocouples and transmitters.
- Cables between transmitters and junction box.

For multistage pumps in pipeline applications, where MCF recirculation line is generally not provided, casing skin temperature monitoring as defined above shall be provided irrespective of the pumping temperature.

7.6 Piping and Appurtenances

7.6.1 **General**

7.6.1.6 (Modification)
The words 'if specified' stand deleted.

7.6.1.7 (Modification)
Flange fasteners on stainless steel piping systems shall be of stainless steel.

7.6.2 **Auxiliary Process Fluid Piping**

7.6.2.3 (Modification)
Auxiliary process fluid piping material shall be SS-316 as a minimum.

7.6.2.6 (Substitution)
Casing shall be provided with drain connection with nipple, threaded and seal welded or manufacturer's standard and provided with a socket welded gate valve terminated at edge of the base plate. Gate valve shall be of minimum 800# rating with material of construction (MOC) equal or superior to the pump casing. For multistage pumps with more than one drain point, block valves at each drain point shall be provided and the piping shall be terminated at edge of the base plate with a flange. Unless made self-venting design, vent connections shall also be provided with a nipple, threaded and seal welded and terminated with a gate valve. Pressure gauge connection shall not be provided unless specifically required in the inquiry. Nipples shall meet the requirements of 6.4.3.4.

7.6.2.8 (Modification)
Flanges are required instead of socket welded unions for all auxiliary process fluid piping.

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7.6.2.11 (New)
Unless otherwise specified, material for seal flushing liquid cooler shall be as under:
Tube or Coil : Type 316 stainless steel or Monel.
Casing (or Shell) : Carbon Steel.
Cooling water shall be on the casing (Shell) side.

7.6.3 Cooling Water Piping

7.6.3.4 (New)
Sight flow indicator shall have ball or flag for easy verification of water flowing through pipes.

7.6.3.5 (New)
Thermal relief valve (in each isolatable cooling water circuit) shall be provided upstream of globe valve on the cooling water outlet line. Set pressure of thermal relief valve shall be equal to the design pressure of cooling water piping system.

8 Inspection, Testing and Preparation for Shipment

8.1 General

8.1.7 (New)
Prior to start of test, manufacturer shall furnish the certificate of latest calibration / re-calibration of driver and measuring instruments for review by purchaser's inspection agency. Unless electrical or mechanical failure occurs, driver used for shop testing need not be recalibrated and original calibration certificate shall remain valid.
Duration of recalibration for all measuring instruments shall be as per the recommendations of HI Standards.

8.2 Inspection

8.2.1 GENERAL

8.2.1.3 (Substitution)
The minimum inspection requirements for pressure containing casing shall be as per the following:

Inspection category	Inspection requirement	Remarks
CATEGORY A	Visual inspection and Magnetic Particle or Liquid Penetrant inspection of following components as a minimum: - Nozzle weld - Butt welds on pressure containing components - Fillet welds on pressure containing components. - Shaft Radiographic or ultrasonic inspection of the following as a minimum: - Nozzle weld - Butt welds on pressure containing components.	C1. Liquid penetrant inspection shall be performed only when specified magnetic particle inspection is not feasible. C2. Magnetic particle or liquid Penetrant inspection shall be carried out in accordance with Table 14. C3. Ultrasonic inspection shall be carried out when radiography is not feasible. Radiography or ultrasonic inspection shall be carried out in accordance with Table 14.
CATEGORY B	Visual inspection and Magnetic Particle or Liquid Penetrant	B1. Liquid penetrant inspection shall be performed only when

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Inspection category	Inspection requirement	Remarks
	inspection of following components as a minimum: - Nozzle weld - Butt welds on pressure containing components - Fillet welds on pressure containing components. - Shaft	specified magnetic particle inspection is not feasible. B2. Magnetic particle or liquid penetrant inspection shall be carried out in accordance with Table 14.
CATEGORY C	As per vendor's standard Quality Assurance Plan	

Note:
Category A:
This category is applicable for services with process design pressure above 70 kg/cm²g or process design temperature below -29°C or above 300°C.

Category B:
This category is applicable for services within the design pressure and temperature range other than covered under category A above and category C below.

Category C:
This category is applicable for carbon steel and cast iron for services with process design pressure up to 40 kg/cm²g and design temperature from 0 to 150°C.

8.2.1.5 (New)

Inspection shall also include dimensional check of pump, driver and auxiliaries (if any) duly mounted on the base plate, in accordance with certified general assembly drawing. This will include all main pump dimensions, base plate dimensions, location of foundation bolt holes, size/position/rating of flanges, coupling guard arrangement, verification of the required material certificates and their trace-ability to the respective components. In addition, following checks shall also be carried out:

- A measurement of the actual running clearances throughout the pump.
- A check for the hardness of wear rings.
- A check of discharge nozzle bore size
- A check for good workmanship and finish throughout.

8.2.1.6 **Inspection & Testing requirements:** (New)

A. Pump-Centrifugal Horizontal (SPP) / Pump-Centrifugal Vertical (SPP) / Pump-Centrifugal Canned Motor / Pump-Centrifugal Submerged Motor (Cryogenic) / High Speed Integrally Geared Centrifugal Pumps:

Sno.	Inspection & Tests	Scope of Inspection (Note-1)
1	Shop Test / Inspection	R
2	Material Certificates	R
3	Hydrostatic test	R
4	Performance Test / Sound level Test	W
5	NPSH Test as required (as per specification) / Minimum Submergence Test (for Vertical pumps)	W
6	Dismantle Inspection & Re-assembly after test	W (Note-2)
7	Unitization / Check of direction of rotation of pump	O (but not required for PMC jobs; to be governed by contractor's quality plan)
8	Visual, dimension and skid completeness check	W (Conventional jobs) R (PMC jobs)

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B. Pump-Centrifugal Horizontal Multistage (SPP) / Pump-Centrifugal (BFW)

Sno.	Inspection & Tests	Scope of Inspection (Note-1)
1	Shop Test / Inspection	R
2	Material Certificates	R
3	Hydrostatic test	W
4	Rotor Dynamic Balancing (Both Main & Spare Rotor)	O
5	Performance Test / Sound level Test	W
6	NPSH Test as required (as per specification)	W
7	Dismantle Inspection & Re-assembly after test	W
8	Unitization / Check of direction of rotation of pump	O (but not required for PMC jobs; to be governed by contractor's quality plan)
9	Visual, dimension and skid completeness check	W (Conventional jobs) R (PMC jobs)
10	Complete Unit Test	W (Note-3)

Legends:

R: Required: Reviewing of manufacturer's shop test reports shall be considered as adequate.
O: Observed: Purchaser shall be notified but work may proceed after scheduled date.
W: Witnessed: A HOLD shall be applied and work shall not proceed without approval.

Notes:

1. The inspection & test requirements specified are applicable for each pump unless otherwise specified.
2. Dismantle Inspection of pump after performance test shall be applicable only in case of abnormality in mechanical behavior (such as excessive noise & vibration, bearing temperature rise etc.) during performance test.
3. All the pumps (except for steam turbine drive pump) with forced feed lubrication system shall undergo complete unit test at rated speed. Job drive, job mechanical seal & job coupling shall be used (with motor getting loaded only upto its full load current value). Shop LO system, Shop machine monitoring instrumentation & controls & shop sealing system can be utilized for this test.

8.2.2 Pressure Casing and Process Piping Materials Inspection

8.2.2.6 (Modification)
The words "if specified" stand deleted.

8.2.2.7 (Modification)
The words "if specified" stand deleted.

8.3 Testing

8.3.1 GENERAL

8.3.1.1 (Modification)
The words 'if specified' stand substituted with 'Unless otherwise specified'

8.3.1.2 (Modification)
Table 16 stands modified as under:
Rated Head : Zero negative tolerance @ rated flow rate & rated speed
Shut-off Head : Following criteria shall apply:
a) Positive tolerance permitted as long as maximum shutoff pressure corresponding to shut-off head (as observed during the shop performance test) and the maximum suction pressure (as specified on

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pump data sheet), does not exceed the downstream design pressure (as specified on pump data sheet).
b) Negative tolerance (as per Table-16) may be permitted only if test curve still shows continuously rising characteristics & shutoff head is minimum 110% of rated head for pumps in parallel operation and minimum 105% of rated head for pumps not in parallel operation.
[Note: Generally, shutoff head should be limited within 120% of rated head.]

NPSHR : Zero positive tolerance.

Rated BKW : Zero positive tolerance. (However, pumps may be accepted upto 104% of guaranteed BKW subject to Penalties as defined elsewhere.

8.3.1.4 (New)
Unless otherwise specified the following tests shall be witnessed by the Purchaser or by their authorised representative or by both together.

1. Hydrostatic test as per 8.3.2 for Multistage Pumps.
2. Performance test as per 8.3.3.
3. NPSHR test as per 8.3.4.3 when specified in the material requisition or when the difference between NPSHA and NPSH3/NPSHR is less or equal to one (1) meter.
4. Unitization of Pump with Job Driver at shop.
5. Dismantling inspection and reassembly, after the running test
6. Dynamic balancing of Complete Rotor in case of Multistage Pumps
7. Sound level test.

Test Certificates for Hydrostatic Test & Dynamic Balancing of Impeller(s) will suffice for single & two stage pumps. These test certificates shall be furnished to purchaser's inspector for review prior to performance testing.

8.3.3 Performance Test

8.3.3.6.3 (Modification)
During the performance test, rise in temperature of bearing oil shall be measured and results recorded on the test log. If specified, pumps provided with oil mist lubrication (Purge/Pure) shall be tested with shop oil mist system & suitable performance at vendor's shop shall be demonstrated.

8.3.3.8.2 (Modification)
The words 'if specified' stand deleted.

8.3.3.10 (New)
Shop driver shall be used for testing and the rating of the driver shall not exceed 150% of power that may be consumed while running at duty point with water; or power at full valve open condition, whichever is higher. The limitation of 150% is applicable only for medium voltage motors.

8.3.4 **Optional Tests**

8.3.4.2 **Mechanical Run Test**

8.3.4.2.2 (Modification)
The words 'if specified' stand deleted.

8.3.4.3 **NPSH Required Test**

8.3.4.3.1 (Addition)
If NPSH Required test is specified or if it is required to be done as per para 8.3.1.4, NPSHR shall be determined at each test point defined in 8.3.3.4 except shut-off and in-case of parallel operation additionally at 120% of BEP.

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8.3.4.5 **Sound Level Test** (Modification)
The words "if specified" stand deleted.

During the performance test, the equipment shall be checked for its sound level at minimum flow, at rated flow, at flow at best efficiency point and at 120% BEP flow.

The maximum allowable value shall not exceed the value specified under clause 6.1.14 or as specified in the datasheet, whichever is lower, when measured at one (1) meter from pump surface.

Where complete unit test is specified, vendor is required to demonstrate the noise levels within the maximum permissible sound level for the complete unit.

Recorded sound levels during shop test shall be taken for reference only & not for final acceptance or rejection. However sound level as specified in the inquiry document shall be guaranteed at site.

8.3.4.6 **Auxiliary Equipment Test** (Modification)
The words "if specified" stand deleted.

8.4 Preparation for Shipment

8.4.2 (Modification)
Unless otherwise specified, the equipment shall be protected for an outdoor storage of 12 months at site. If any extra precaution is to be taken by the Purchaser for storage beyond 12 months the same shall be explicitly indicated in the operation and maintenance manuals.

8.4.7 (Substitution)
Two copies of the manufacturer's job specific installation manual shall be packed and shipped with the equipment.

9 Specific Pump Types

9.1 Single Stage Overhung Pump

9.1.1 (Addition)
Unless otherwise specified, overhung pumps for rated flow exceeding 1000 m^3/hr or differential head above 200 m are not acceptable.

9.1.1.3 (Substitution)
The shaft flexibility index shall be calculated in accordance with K.2 and shall be indicated by the pump vendor in his proposal / technical data sheet. The value of shaft flexibility index for overhung pumps, I_{SF}, for the given pump size factor, K_t shall not exceed 1.2 times the equation K.4 (SI units) or K.5 (US units).

9.1.3 **Integral Gear Driven (Type OH6) Pumps**

9.1.3.5 (Modification)
Diameter of gauges shall be 100mm (4 in.) as a minimum.

9.2 Between Bearing Pumps (Types BB1, BB2, BB3 and BB5)

9.2.1.2 (Substitution)
Pumps for all services shall be centreline mounted irrespective of pumping temperature.

9.2.2.3 (Modification)
The words 'if specified' stand deleted.

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9.2.2.5 (New)
Unless otherwise specified, Maximum number of stages shall not exceed 12 for horizontal pumps subject to meeting PTR with respect to Bearing Span & Speed and similar service.
Unless otherwise specified, Maximum number of stages shall not exceed 15 for vertical pumps subject to meeting PTR with respect to Bearing Span & Speed and similar service.

9.2.4 Dynamics

9.2.4.1.1 Table 18-Decision logic for rotor lateral analysis (Modification)
The words 'similar or' stand deleted from step-2.

9.2.6 Lubrication

9.2.6.5 (New)
In case a pressure lubrication system is required and is supplied with shaft-driven main oil pumps (MOP), the MOP shall be suitable for safe coast down of the complete equipment train without necessitating the requirement of overhead rundown tank.

In case MOP is not suitable for safe shutdown of the complete equipment train, the vendor in his offer may propose for purchaser's consideration any special arrangement/provision provided for equipment safety and protection when the equipment decelerates. Provision shall be adequate for coast down time and cool-off time as applicable.

Due to space constraints, mechanical seals for lube oil pump can be as per API 610 / API 676.

9.2.6.6 (New)
External pressure-lubrication systems shall comply with the following additional requirements:

- Pumps, filters, strainers, coolers, traps, valves and all other components that retain oil under pressure and are external to the reservoir shall be made of steel.
- Except in case of shaft driven pumps, if a positive displacement type of oil pump is supplied, a separate relief valve (not integral with the pump) shall be provided. The relief valve shall not be used for pressure regulation. Horizontal oil pumps shall not be installed on top of the oil reservoir.
- A removable tube bundle design is required for shell and tube coolers with more than 0.5 m^2.
- The oil side operating pressure of the oil cooler shall be higher than the water-side operating pressure to prevent contamination of oil in case of cooler failure.
- Filters shall be equipped with a continuous flow transfer valves and an equalising line.
- Oil system shall have drain rim or pan to catch oil spills.
- Unless otherwise specified, heating element shall not be provided. However, if in the opinion of vendor such an arrangement is required (especially in view of the lowest ambient temperature prevailing at job site), the same shall be supplied by the pump manufacturer with specific approval of the purchaser.

9.2.7 Testing

9.2.7.4 (Modification)
The words 'if specified' stand deleted.

9.2.8 Preparation for Shipment

9.2.8.2 (Modification)
The words 'if specified' stand deleted.

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9.2.8.3 (Modification)
The words 'if specified' stand deleted.

9.2.8.4 (Modification)
The words 'if specified' stand deleted.

9.3 Vertically Suspended Pumps (types VS1 through VS7)

9.3.1 **General**

9.3.1.1 (Modification)
Hydraulic performance shall also be corrected for friction head losses in the inlet strainer.

9.3.1.5 (New)
Unless otherwise specified, in case of tank-mounted pumps, the setting depth shall be so arrived that the pump minimum submergence is ensured within the boot of the vessel, i.e. minimum liquid level shall be considered to correspond to bottom of the tank level for ensuring complete evacuation of the tank.

9.3.1.6 (New)
All vertically suspended pumps shall be with shaft segment length not exceeding 750mm.

9.3.2 **Pressure Casings**

9.3.2.11 (New)
Bowls and columns shall be flanged and bolted.

9.3.3 **Rotors**

9.3.3.2 (Addition)
Multi-piece vertical pump line shaft shall not be joined by threaded couplings.

9.3.6 **Bushings and Bearings**

9.3.6.1 (Addition)
Unless otherwise specified, for vertical pumps, material of guide bushing shall be suitable for dry running during start-up / transient conditions as well as running on lubrication by pumping fluid/external source.
These bushing shall be non-metallic [material as per table H.3 (only PEEK continuous-carbon-fiber wound or PFA/CF carbon-fiber filled) suitably selected for service. These bearings after start up shall be lubricated by the pumped fluid or external fluid. A letter from the bush bearing material manufacturer shall be furnished with the bid certifying compatibility of offered line shaft bearing material with the process liquid and operating and design conditions.

9.3.6.2 (Modification)
Pump thrust shall not be transferred to driver motor. Vertical pumps shall be provided with their own thrust bearing to carry rotor weight and pump generated axial forces.
Thrust bearing shall be positively locked on the pump shaft (shouldered shaft) and the bearing housing.

9.3.8 **Accessories**

9.3.8.1.1 Drivers (Modification)
For vertical pumps, not provided with non-reverse ratchet, vendor shall describe the precaution taken, to prevent damage due to reverse rotation.

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9.3.8.3 **Mounting Plates**

9.3.8.3.1 (Modification)
The words 'if specified' stand deleted.

9.3.8.3.2 (Modification)
The words 'if specified' stand substituted with 'unless otherwise specified'.

9.3.10 **Single Case Diffuser (VS1) And Volute (VS2) Pumps**

9.3.10.4 (Modification)
The words 'if specified' stand deleted.

9.3.13 **Double Casing Diffuser (VS6) And Volute (VS7) Pumps**

9.3.13.1 (Modification)
The words 'if specified' stand deleted.

9.3.13.4 (Modification)
The words 'if specified' stand deleted.

10 Vendor's Data
Refer Annexure-L

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Annex-C: Hydraulic power recovery turbines

C.1 General

C.1.1 EXPERIENCE CRITERIA

C.1.1 1 The HPRT model offered shall be from the existing HPRT model series and shall be from the regular manufacturing range of the vendor (Prototypes are not acceptable).

The mechanical design as well as the hydraulic performance for the complete range of operation of the offered model shall have been established in the shop test. (Details to be furnished, if required).

The offered HPRT model shall be field proven (at least ONE unit) with minimum operating experience of one year for similar operating/design conditions & power generated, rotor dynamics, mechanical design, pumping liquid and material of construction, supplied in the last Ten (10) years, from the proposed manufacturing plant, as on BDD.
(Note: Similar operating/design conditions & power generated would mean approx. 80% or higher. For pumping liquid and material of construction references in the same model series are also acceptable.)

C.1.1.2 The vendor shall complete the Experience Record Proforma enclosed with the inquiry document to amply prove that the offered HPRT model meets the above criteria by furnishing details of similar operating/design conditions {flow, head, operating/design pressures & temperatures, % vapour handled at discharge, speeds, efficiencies, power generated, no. of stages, bearing span etc.}, Rotor Dynamics {Impeller Arrangement, No. of Impellers, Bearing Span, Speeds etc.}, Mechanical Design {Bearing Type & Lubrication, MAWP etc}, pumping liquid & material of construction etc. as applicable in the format.

Past Test Curves of HPRT tested as HPRT shall also be submitted (when requested) to justify the quoted efficiencies.

Multiple references may be furnished to justify the above. Only pumps working as HPRT will be construed as valid reference.

In addition, manufacturer's catalogue and general reference list for "Centrifugal Pumps-Special Purpose Process Service working as HPRT" shall also be furnished along with the proposal.

C.2 Terminology (Addition)

Unless otherwise specified, all the requirements for centrifugal pumps, specified herein this Standard Specification, shall be applicable for HPRT, as applicable. However, the word 'Centrifugal Pump' shall be read as 'HPRT'.

C.3 Design

C.3.1 Liquid Characteristics

C.3.1.2 (Addition)
Vendor shall estimate the vapour volumes expected at each stage of the HPRT and furnish a stage- wise profile of the vapour evolution. Vendor shall justify that the HPRT is capable of handling the expected vapour volumes with suitable references and supporting design documents.

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C.3.3 Overspeed Trip

C.3.3.1 (Addition)
The Hydraulic Power Recovery Turbine (HPRT) shall be provided with a speed detector and a non- over latching over- speed trip contact (Mechanical/ Electronic through Speed Transmitters (2oo3 voting logic)) and an additional contact for pre- alarm. The over- speed trip contact will be incorporated into shutdown system by the Purchaser to close the inlet valve of the HPRT. Pump operation shall, however, be allowed without interruption.

The over speed trip setting for HPRT shall be verified at Manufacturer's test bed during Performance Testing. In case of any limitation at Vendor's Works, the same shall be demonstrated during Field Trial Run Test.

C.3.4 Dual Drivers

C.3.4.2 (Substitution)
Power availability from HPRT shall not be considered for the purpose of motor sizing as pumps are supposed to run even without HPRT and motor shall be sized for full load.

C.3.4.3 (Substitution)
The HPRT shall be equipped with an overrunning (one way i.e., a clutch that transmits torque in one direction and freewheels in the other) clutch- coupling for connection with the Electric Motor driving the Pump. The clutch coupling shall be designed for 1.7 times the maximum recoverable kW of the HPRT. Vendor shall propose clutch Manufacturer having suitable past supply references for similar power ratings and speed and same shall be subject to Purchaser's review and approval during Detailed Engineering Stage.

C.3.4.5 (Substitution)
Unless otherwise specified, the HPRT cum Electric Motor driven Pump trains shall consist of a double ended motor with pump on one side and an overrunning clutch with HPRT on the other side.

Train configuration with HPRT + PUMP + Single Ended Motor may be permitted only in case of axially split pump design.

Pump operation shall, however, be allowed without interruption, in case of HPRT outage.

C.3.6 Throttle Valves (Addition)
All the trips connected to the HPRT will only be configured to shutdown the inlet valve of the HPRT, thereby allowing the pump operation without interruption.

C.3.9 Miscellaneous Technical Requirements (New)

C.3.9.1 The rated speed of the Pump- HPRT Train shall not exceed 3000 rpm (synchronous). No gear box is normally envisaged.

C.3.9.2 Dual Pressure Rating (Suction/ Discharge) for HPRT is not acceptable

C.3.9.3 Impeller of HPRT shall also be positively locked against axial movement in the direction opposite to normal hydraulic thrust.

C.3.9.4 Maximum Allowable Working Pressure (MAWP) & Maximum Allowable Working Temperature (MAWT) of HPRT shall neither be less than the Upstream Design Pressure/ Maximum Suction Pressure (as the case may be) & Design Temperature, as specified in the respective Process Datasheets nor less than those specified in specifications, codes & standards.

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The HPRT casing shall also be suitable for operation at maximum pressure available at HPRT minimum flow with Specific Gravity= 1.0 (i.e. water). This is required during Shop Performance test with water at Rated Speed.

C.3.10 **Base plate** (New)

The Pump, Electric Motor and HPRT with Clutch assembly shall be mounted on a common base plate, to be erected at site at Grade. However, if found infeasible due to transportation constraints, the Pump and Electric Motor shall be mounted on one base plate and the HPRT with clutch assembly may be mounted on one separate base plate for ease of assembly at site. Vendor shall provide both the base plate sections with machined mating surfaces and all provisions for integrating (dowelling/ bolting etc.) and matching for accurate field reassembly and unitizing the two base plate sections to make one single common base plate under pump train at site. For this, horizontal and vertical jack screws shall be provided for ease in alignment. LO Console & SO Console may be mounted on separate base plates subject to Purchaser's approval.

C.4 **Testing**

C.4.1 **Performance Test** (Substitution)

a) Test Facilities, Arrangements & Procedures:

The vendor shall have the testing facility for testing HPRT as HPRT and not as a Centrifugal Pump to establish Guaranteed Power recovered from HPRT. A high pressure source (or another pump) shall be used to run the HPRT for Performance Test and power output from HPRT shall be measured at various points as per details below.

Vendor shall furnish the details of the proposed test arrangements and testing procedures to be followed on conducting the Performance Tests of HPRT and the Complete Unit Test (Mechanical Run), during detailed engineering stage. However, detailed test procedures for testing of HPRT shall be subject to Purchaser's review/ approval.

Note: Sample test procedures of test conducted in the past by the vendor should be furnished in proposal. Past supply references of jobs wherein proposed testing of HPRT is carried out as HPRT should also be furnished by the vendor, in the proposal.

b) Performance Test of Hydraulic Power Recovery Turbines (HPRTs):

Performance test of the HPRT at its full load and full speed with Job / Contract Mechanical Seals, shall be carried out at Manufacturer's shop either as separate performance test as HPRT or during complete pump-HPRT train complete unit test. HPRT shall be performance tested as HPRT and not as a pump.

The performance Test shall establish the guarantee power output and shall also fully establish the performance curves covering at least four (4) points. Dismantling inspection of all close clearance parts, bearings & seals, shall follow the performance test in case abnormality in mechanical behavior such as excessive noise, bearing temperature rise, etc. is encountered.

Note: Vendor shall provide brief technical proposal for the HPRT performance test along with the Bid.

Performance Test shall be followed by Mechanical Run Test for four (4) hours and Over-speed trip demonstration test.

C.4.2 **Performance Tolerances** (Addition)

No negative tolerance on power for the specified operating conditions, as per Process/ Mechanical Datasheet is permitted.

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C.4.5 **Complete Unit Test** (New)

Unless Otherwise specified/ agreed, Complete Unit Test (applicable for all the Pump- HPRT Trains) of the Pump, along with Job Coupling, Job Mechanical Seal, Job Electric Motor driver, Job HPRT and Job Probes (except Job Lube Oil System & Job Seal System), shall be performed for at least four (4) hours at Pump Manufacturer's Shop. Use of Shop Panel/ Monitoring System & Shop Strainers, is acceptable.

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Annex-L : Contract Documents and Engineering Design Data (Informative)

L1.1a) (Substitution)
The purchaser`s/owner`s/consultant`s corporate name

L.2 **Proposals**

L.2.1 **General** (Substitution)
The vendor's proposal shall as a minimum include the following:
- All data sheets, drawings and documents specified under "WITH BID" Section in the Vendor Data Requirement Form.

Note: Clearance less than those required by 6.6.4 and Table 6, shall be stated as an exception to API 610.

L.2.4 **Curves**

a) (Modification)
This clause stands deleted.

L.3 Engineering Design Data

L.3.1 **General** (Substitution)

L.3.1.1 Engineering Design Drawings and data as required after purchase order has been specified in Vendor Data Requirement. Vendor to note that the drawing/document descriptions/titles as given in the Vendor Data Requirement are generic in nature. It is possible that against one drawing / document specified there are several drawings to be furnished by the vendor or vice versa.

L.3.1.2 All vendor data/drawings/documents shall be in English Language and in Metric Systems. All post order documents shall be submitted / approved through EIL VDM portal.

L.3.1.3 Final documentation shall be submitted in hard copy and soft (CDs/ DVDs) in addition to submission through EIL VDM portal. The number of prints and/or reproducible required to be submitted by vendor are specified in Purchaser's inquiry/order.

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उपकेन्द्रीय एवं घूर्णी पम्पों के शाफ़्ट सीलिंग लिए मानक विनिर्देश

STANDARD SPECIFICATION FOR SHAFT SEALING SYSTEM FOR CENTRIFUGAL & ROTARY PUMPS

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
					Approved by	
0	20.08.2025	Issued as Standard Specification	MG	TK	NK	MN

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Abbreviations:

API	:	American Petroleum Institute
ASME	:	American Society of Mechanical Engineers
EC	:	Experience Criteria
ES	:	Engineered Seal
GA	:	General Arrangement
ISO	:	International Standards Organization
MAWP	:	Maximum Allowable Working Pressure
MSSP	:	Maximum Static Sealing Pressure
MDSP	:	Maximum Dynamic Sealing Pressure
NRV	:	Non Return Valve
OD	:	Outside Diameter
PEEK	:	Poly Ether Ether Ketone
P&ID	:	Piping & Instrumentation Diagram
PSV	:	Pressure Safety Valve
PTR	:	Proven Track Record
SWG	:	Standard Wire Gauge
TFE	:	Tetrafluoroethylene
TPI	:	Third Party Inspection
TI	:	Temperature Indicator
QAP	:	Quality Approval Plan
VDM	:	Vendor Data Management

Rotating Equipment Standards Committee

Convenor: Mr. Nalin Kumar

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