

**REPLY TO PRE-BID QUERIES**

**TENDER DOCUMENT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMHE ELECTRIC MOTOR DRIVEN CNG COMPRESSOR PACKAGES**

**TENDER NO: IGL/ET2/CP/CC18263**

Sl. No.	Volume/ Section/ Clause No.	Page No.	Clause No.	Clause	Bidder's Query	IGL Reply
1	Commercial Volume I	7 of 111	2.1a & c	The Compressors are to be dispatched in lots as defined in clause no. 4.0 below.	We request purchaser to confirm the Lot size in numbers and how many packages will be required to supply in the first Lot.	Refer Corrigendum - I
2	Commercial Volume I	60 of 111	9.1	A. For Supply, installation & commissioning and Performance Acceptance Test: equivalent to 10% of respective Purchase Order value inclusive of all taxes, duties and charges towards supply, packing & forwarding, Transportation, Installation, Commissioning & PAT. B. For Comprehensive Maintenance Services: CPBG equivalent to 2.5% of annualized total Contract value for comprehensive maintenance (incl. of all taxes) initially and 7.5% of annualized individual release/purchase order value (inclusive of all taxes).	We draw reference from Office Memorandum dated 01.01.2024 issued by Ministry of Finance wherein the Performance Security in respect of procurement only of Goods/ Consultancy Services/ Non-Consultancy Services, has been reduced to an amount of three to five per cent (3-5%) of the value of the contract as specified in the bid documents. Copy attached for your reference. Purchaser also has accepted CPBG equivalent to 5% of award value on yearly basis towards Contract No : 7700003661 dated 14.09.2024. In view of above, it is requested to accept the CPBG to 5% to the purchase order as other all CGD companies are also following the same.	Tender Condition Prevails
3	Commercial Volume I	15 of 111	12	12.1 All bids must be accompanied by a bid security of amount Rs. 20,00,000/- (Rupees Twenty Lakh only). 12.2 Bid security/EMD against e-tender can be submitted either through online e-payment mode available on e-tender portal or in the form of Letter of Credit / Demand Draft / Banker's Cheque in favour of Indraprastha Gas Ltd, payable at Delhi or in the form of Bank Guarantee from any Nationalized/ Scheduled Indian Bank or by the branch of a reputable international bank located in India..... from scheduled date of bid submission. 12.3 Bid security/EMD can also be submitted through online transaction directly to IGL account as mentioned below. Bidders opting for this mode of EMD shall be required to upload the ..... the bid liable for rejection. <b>Account No. 200999031485</b> IFSC INDB0000005 MICR No. 110234002 Bank Name Indusind	We shall be submitting requisite EMD by way of Bank Guarantee. We request purchaser to confirm which bank details to consider while issuing Bank Guarantee in BG text at which SFMS IFIN 760 message to be sent by issuing bank, to establish the authenticity of given BG	For BG against EMD, Account details are as follows: Account No.: 200999031485 IFSC: INDB0000005 MICR No.: 110234002 Bank Name: Indusind Tender Condition Prevails
4	Commercial Volume I	60 of 111	9.5	While issuing Bank Guarantee issuing applicant must mention receiver's details as ICICI Bank IFSC- ICIC0000007, Branch CONNAUGHT PLACE, DELHI, in BG text at which SFMS IFIN 760 message to be sent by issuing bank, to establish the authenticity of given BG		For CPBG, IFSC: ICIC0000007 is to be considered. Tender Condition Prevails
5	Commercial Volume I	62 of 111	11.1	For Comprehensive maintenance services: To derive rate for sixth and subsequent years (6th to 10th year), 10% annual escalation on derived rate of 5th Year to be considered.	We understand that to derive rate for sixth and subsequent years (6th to 10th year), 10% annual escalation Year on Year basis on derived rate of 5th Year shall be considered. Please confirm.	Bidder understanding is correct

6	Commercial Volume I	8 of 111	6	Tender document number IGL/ET2/CP/CP18272 dated 27.11.2024	Tender document no. IGL/ET2/CP/CC18263 is declared at the cover page of Tender under the section 6 -Details of tender documents, tender no. is mentioned as IGL/ET2/CP/CP18272  We understand that correct tender no. is IGL/ET2/CP/CC18263.  Please confirm	Bidder understanding is correct																														
7	Commercial Volume I	Pag 87 of 111	4.2 (E2)	Energy Consumption (F)	We understand that Engine Fuel Consumption (F) to be read as Energy Consumption (F)  Please confirm	Bidder understanding is correct																														
8	Technical Volume II	12 of 85	1.6	If communication of the flowmeters (suction, engine and discharge) is not available then the compressor should trip and an error message should be displayed in display.	We understand that the word "Engine: is not applicable as it is Motor Driven Compressor Package  Please confirm if our understanding is correct	Bidder understanding is correct																														
9	Technical Volume II	65 of 85	18	Power Factor	We understand that Service or Power Factor should be considered as 1. Please confirm if our understanding is correct	Motor Rating shall be minimum 110% of the greatest BKW required by the compressor in normal range of operation. Further motor shall be IE3 or better with service factor 1.																														
10	Technical Volume II	50 of 85	14.2	Guaranteed parameters at Suction pressure of 16 KG/CM2(g); Compressor Capacity required = 1200 SCMH Compressor capacity in SCMH at suction pressure of 14kg/cm2(g), discharge pressure of 250 kg/cm2(g) and gas inlet temp 30 0 C (No -ve tolerance);	We understand that under Guaranteed parameters table at Sr. No. 1, at Suction pressure mentioned as 14 KG/CM2(g); whereas the suction pressure should be 16 KG/CM2(g)  Please confirm if our understanding is correct	Refer Corrigendum - I																														
11	Technical Volume II	50 of 85	14.3	Parameters at Suction pressure of 19 Kg / Cm2 (g); Compressor capacity by Bidder: Compressor capacity in SCMH at suction pressure of 14kg/cm2(g), discharge pressure of 250 kg/cm2(g) and gas inlet temp 30 0 C (No -ve tolerance);	We understand that under Guaranteed parameters table at Sr. No. 1, at Suction pressure mentioned as 14 KG/CM2(g); whereas the suction pressure should be 19 KG/CM2(g)  Please confirm if our understanding is correct	Refer Corrigendum - I																														
12	Technical Volume II	51 of 85	15	<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Component</th> <th>% Mole</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Methane</td> <td>92.34</td> </tr> <tr> <td>2</td> <td>Ethane</td> <td>5.47</td> </tr> <tr> <td>3</td> <td>Propane</td> <td>0.32</td> </tr> <tr> <td>4</td> <td>Butane</td> <td>0.027</td> </tr> <tr> <td>5</td> <td>Pentane</td> <td>0.003</td> </tr> <tr> <td>6</td> <td>Nitrogen</td> <td>1.78</td> </tr> <tr> <td>7</td> <td>Carbon Dioxide</td> <td>0.00</td> </tr> <tr> <td>8</td> <td>Sulphur</td> <td>00</td> </tr> <tr> <td></td> <td>Total</td> <td>100</td> </tr> </tbody> </table>	Sr. No.	Component	% Mole	1	Methane	92.34	2	Ethane	5.47	3	Propane	0.32	4	Butane	0.027	5	Pentane	0.003	6	Nitrogen	1.78	7	Carbon Dioxide	0.00	8	Sulphur	00		Total	100	Under the given Gas composition, the cumulative of gas composition equals to 99.94%. Kindly provide the gas composition with cumulative of 100%	Refer Corrigendum - I
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13		8	3.6	For Comprehensive maintenance services: To derive rate for sixth and subsequent years (6th to 10th year), 10% annual escalation on derived rate of 5th Year to be considered.	We would like to inform you that due to uncertainties of the wages, steel price etc we will not be able to predict exact variation. Also, we cannot load more than 15% due to higher cap in the maintenance. Hence, the rates from 6th to 10th year will be decided and mutually agreed before the closure of 5th year.	Tender Condition Prevails																														
14		8	3.6	For Operations: To derive rate for sixth and subsequent years (6th to 10th year), 10% annual escalation Year on Year basis on derived rate (excluding wage components, variation of which is payable on actual basis) of 5th Year shall be considered. It will be responsibility of bidder to ensure the payment of minimum wages of Centre/ state whichever is higher to workmen engaged for operations.	Kindly confirm your acceptance.	Tender Condition Prevails																														

15		43	29.1	The Contractor shall pay to the Owner, by way of compensation for delay and not as penalty, a sum @ ½% (half per cent) per complete week of delay of the value of the "supply portion for the quantity" OR "the work portion" that is delayed per complete week subject to maximum of 5% (Five Per Cent) of the total contract value.	Please note as the order is released on the Lot basis, the reduction should be on undelivered portion of the individual delivery order value and not on the total order value. Also, please note this is applicable to only supply price. In case the delivery order is for both supply and AMC service then only for supply of package should be applicable and AMC service value shall not be considered for reduction.	Please refer clause 10.2 of Special Conditions of Contract
16		8	4.1	Each lot is to be delivered at IGL site/ stores within 12 weeks from the date of purchase order. Time period between subsequent lots shall be minimum 30 days.	Please elaborate delivery period of individual lots with their sizes(No. of packages in each Lot )	1st lot of 10 Nos. of compressors are to be delivered within 12 weeks from the date of LOA/ Intimation from IGL. Subsequent lots to be delivered within 12 weeks from date of intimation as per IGL requirement.
17				GA wise location.	We intend to have site locations or GA wise locations in order to prepare for operation & maintenance charges .  Also Specify wages to be considered for operation , state or central ?	Tentative locations are mentioned in Material Requisition in Technical Volume (Volume II / II of Tender Documents). However, exact locations will be mapped in individual purchase orders.
18		12	1.6	Separate flameproof junction boxes for different type of signals like analog, digital signals, alarm, shutdowns, and thermocouples, RTDs etc. for interfacing to FLP local panel. Same is not applicable for direct run cable up to PLC panel.	Please note Local control panel (With PLC) is mounted on package itself hence junction boxes are not required. Instruments will be directly wired to Local control panel	Direct run cable upto PLC/ local panel, Junctions box is not required; rest tender condition prevail.
19		12	1.6	Inlet twin suction gas filter / Duplex suction filter of filtration level up to 5 micron with oil drain valve, differential pressure gauge and temporary suction line strainer at the package inlet and at other stage (if required).	Please note Duplex suction gas filter with oil drains and temporary suction inline strainer will be placed outside the package as the compressor package inlet. This system is available in all our packages and accepted by al the CGD companies and 600+ CNG compressor are running successfully.	Noted
20		12 & 13	1.6	Separator/ Knockout drums/volume bottles with drains operated by solenoid valves, as required. Bypass valves for automatic drain system with manual drain shall be as per manufacturer's recommendation and proprietary design. All drain lines shall be provided with level operated / time based auto drain valves and NRVs.	The proposed CNG package has suction volume bottle at each stage and discharge volume bottle at final stage discharge only. The volume bottles at suction are connected to condensate drain system through auto-drain & Manual drain system. These volume bottles shall act as scrubbers/ condensate removal system. No separate KODs shall be supplied. Isolation valve is mounted in upstream of auto drain valve.This is our standard design offered in all our CNG packages. Please confirm your acceptance.	Noted
21		13	1.6	Y- type strainers, valves, sight flow indicators, check valves with check valves protector, manual drain/ traps etc. as required for various auxiliary systems i.e. frame lube oil, cylinder lubrication system, cooling water systems, fuel supply/conditioning system etc. In case divider block lubrication system, paper filter for frame oil & check valve in that circuit are also acceptable.	Please note that as per Manufacturer's standard practice the lubricator will be divider block type. Y type strainers, Sight flow indicators, check valve etc are applicable for Single Plunger per point lubricator, thus not applicable. This is our propretory desing and installed in almost 600 + CNG compressor all over india and are running successfully.	Noted
22		17	Safety	Relief Valves shall be provided at suction and discharge and in between inter stages of compressor with setting as per cl. 11.18.5 of ISO 13631: 2009 with R.V. venting as per cl. 11.18.6 of ISO 13631: 2009. All vented lines to be connected to common relief valve header.	Please note that as per Manufacturer's standard practice,Relief valve will be provided on BDV and each stage discharge.  Please confirm your acceptance.	Noted. Rest tender condition prevails
23		23	4.7.2	Lubricators shall have a sight flow indicator for each lubricator point and a stainless steel Double ball check valve shall be provided at each lubrication point. Common sight flow indicator for Divider Block is also acceptable. Brass NRV shall also be acceptable.	Please note that as per Manufacturer's standard practice, the lubricator will be divider block type with pin indicators. Sight flow indicators for each lubricator point and a double ball check valve are applicable for Single Plunger per point lubricator, thus not offered.	Noted

24		23	4.8.2	Cooler design shall be on the basis of 20% excess capacity than required corresponding to suction pressure of 19 kg/cm2.	We shall design the interstage and final stage discharge cooler for outlet temperature of 60degC. considering ambient temperature of 50degC. The cooler design shall be on the basis of 20% safety based on thermal duty at design suction pressure condition and the suitability of this area shall be checked for the most severe condition corresponding to suction pressure. This is our standard design practice and we follow this for all our CNG packages. Kindly confirm your acceptance.	Tender Condition Prevails
25		25	4.1	Pulsation, Vibration Control and Analog Study	Please note that Pulsation suppressor devices for CNG compressors are standardized in design. Order specific pulsation study is not carried out.	Tender Condition Prevails
26		25	4.12.6	The enclosures shall have doors for normal access and removable wall panels for ease of maintenance of all the components.	The enclosure shall have hinged doors instead of removable panels. Please confirm your acceptance.	Noted
27		26	4.12.8	All local pressure and temperature gauges shall have minimum dial size of 63 mm.	Please note that ,as per our standard,we have provided All local pressure and temperature gauges with 100 mm dial gauge size. This is our standard supply and accepted by all CGD componies and we have supplied 600+ packages.	Noted
28		26	4.12.11	One vent line with double isolation valve shall be provided to emptying the package at 3rd stage separator.	Please note that as per our standard manufarurer practice,we have provided Single isolation valve instead of double isolation at each stage seperator drain	Tender Condition Prevails
29		42	12	One no. licensed software for compressor PLC	Request you to please confirm if the application software for PLC & HMI is requiried per compressor or along with complete set of compressors.	Bidder shall provide 1 set of licensed software along with relevant interfacing adaptors and cables in each city of GA where compressor package will be installed and commissioned
30	3.4, 3.5, 3.6 IFB - Vol I / 11. reasonability of rates			TYPE AND DURATION OF CONTRACT	The ten years O&M period shall be firm and awarded to bidder in totality. Alternatively, IGL can confirm firm O&M period for the first 5 years, and for 6th & 7th year we propose 15% escalation, and 20% escalalation for 8th, 9th & 10th on YoY basis.	Tender Condition Prevails
31	3.3 IFB - Vol I / 11. reasonability of rates			TYPE AND DURATION OF CONTRACT / Notes to Material Requisition Vol II	For Comprehensive Annual Maintenance Contract (CAMC), fixed charges for 1st year to be considered within the <b>range of 8% to 10%</b> of unit Ex-works price including Installation, Commissioning & Field Performance Test and Transportation Charges. There shall be <b>escalation of 2%</b> for the subsequent years. If bidder quotes lesser or higher price then the prescribed range of CAMC, than the bids will be liable to be rejected.	Tender Condition Prevails
32	2.2 IFB - Vol I / 14.2 SCC			OPERATION AND COMPREHENSIVE MAINTENANCE PORTION	The operation & comprehensive maintenance rates for that particular period (year) will be applicable in which the Compressor shall get commissioned.	Bidder understanding is correct. The rates shall be applicable as per clausue no. 14.2 of SCC
33	4.0 IFB - VOL I			Delivery Schedule	Kindly specify per Lot qty's & modify delivery period of first Lot to atleast 20 weeks & subsequent lots to 18 weeks. As per tender, Motor's shall be IE-3 efficiency and delivery periods for these motors are high. Hence the request.	1st lot of 10 Nos. of compressors are to be delivered within 12 weeks from the date of LOA/ Intimation from IGL. Subsequent lots to be delivered within 12 weeks from date of intimation as per IGL requirement. Rest tender consitions shall prevail.
34	VOL I GCC (13) / SCC (9)			CONTRACT-CUM-EQUIPMENT PERFORMANCE BANK GUARANTEE	BG should be considered seperately for AMC and Equipment. For supply portion, the 10% basic value of PO CPBG shall be given per lot basis and not for the full contract. This is in view of the fact that all machines as per contract are not sometimes lifted by IGL and bidder ends up submitting a higher value BG. For CAMC, kindly consider 10% CPBG on per year basis as it is difficult to provide BG for period of 5 years.	Tender Condition Prevails

35	19 - GCC VOL I			Transportation	Equipment will be transported to destination as advised by Purchaser in the despatch clearance. Unloading at site shall be one time activity in scope of bidder either at site or stores. Transportation of equipment between sites or from stores to site and related loading & unloading is not included in scope of bidder. This will be additionally charged in case IGL wants to get the job done from bidder. Or else kindly give option for quoting RE-TRANSPORTATION rates in the SOR. Transit Insurance will be applicable & terminate once goods are unloaded at Site / Stores. No other insurance is applicable for the bidder like for storage of equipment at site / stores., theft, fire, damage etc. Ward & Watch, Storage of equipment at IGL site / stores is not part of scope of bidder. Bidder shall be relieved of the responsibility once equipment is unloaded at site / stores.	Tender Condition Prevails
36	20 - GCC / 14.1 SCC - VOL I			Guarantee / Warranty	If any trouble or defect, originating with the design, material, workmanship or operating characteristics of any materials, arises at any time during twelve(12) months from the date of Commissioning of individual equipment or Eighteen (18) months from the date of Invoice of individual equipment, whichever period shall first expire, and the Supplier is notified thereof, Supplier shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements as may necessary to permit the materials to function in accordance with the specifications and to fulfil the foregoing guarantees. However, in no case, warranty of repaired/replaced part shall exceed 18 months from the date of commissioning of original equipment or 12 months from date of supply of individual equipment , whichever is earlier.	Tender Condition Prevails
37	26 GCC / 39 SCC			SUB CONTRACTING / SUB LETTING	We understand that subletting of contract to be allowed for existing contractor proposed by us or new contractor with request letter to Purchaser	Tender Condition Prevails
38	29 GCC / 10 SCC			PRICE REDUCTION SCHEDULE (PRS) 29.1 Time is the essence of the Contract. In case the Contractor fails to complete the Work within the Contractual Completion period, then, unless such failure is due to Force Majeure as defined herewith or due to Owner's defaults, the Contractor shall pay to the Owner, by way of compensation for delay and not as penalty, a sum @ ½% (half per cent) per complete week of delay of the value of the "supply portion for the quantity" that is delayed per complete week subject to maximum of 5% (Five Per Cent) of the total contract value.	PRICE REDUCTION SCHEDULE (PRS) 29.1 Time is the essence of the Contract. In case the Contractor fails to complete the Work within the Contractual Completion period, then, unless such failure is due to Force Majeure as defined herewith or due to Owner's defaults, the Contractor shall pay to the Owner, by way of compensation for delay and not as penalty, a sum @ ½% (half per cent) per complete week of delay of the value of the "supply portion for the quantity" that is delayed per complete week subject to maximum of 5% (Five Per Cent) of the <b>BALANCE UNDELIVERED PORTION value</b> only. PRS shall be applicable per LOT order.	Please refer clause 10.2 of Special Conditions of Contract
39	33.0 GCC Vol I			TERMINATION FOR OWNER'S CONVENIENCE	Owner/Purchaser shall take complete deliveries as per PO.	Tender Condition Prevails
40	34.0 GCC / 42 SCC Vol I			Force Majeure	Bidder shall not be liable for any loss due to natural calamity for the equipment once delivered and/or kept in IGL stores/site under circumstances of equipment still not Installed, erected or commissioned.	Tender Condition Prevails

41	60 GCC - VOL I / 29, 33 SCC			Insurance & Storage of material	Bidder shall be liable for only transit insurance restricted and limited only for the on road inland transit period and same shall expire once material is unloaded at site / stores. Any sort of Insurance apart from transit insurance shall not be in the scope of the bidder. Transit Insurance will be applicable & terminate once goods are unloaded at SGL Site / Stores. No other insurance is applicable for the bidder like for storage of equipment at site / stores., theft, fire, damage etc. Ward & Watch, Storage of equipment at site / stores is not part of scope of bidder. Bidder shall be relieved of the responsibility once equipment is unloaded at site / stores. Equipment will be transported to destination as advised by Purchaser in the despatch clearance. Unloading at site shall be one time activity in scope of bidder either at site or stores. Transportation of equipment between sites or from stores to site and related loading & unloading is not included in scope of bidder. This will be additionally charged in case Purchaser wants to get the job done from bidder. Or else kindly give option for quoting RE-TRANSPORTATION rates in the SOR. Transit Insurance will be applicable & terminate once goods are unloaded at Site / Stores. No other insurance is applicable for the bidder like for storage of equipment at site / stores., theft, fire, damage etc. Ward & Watch, Storage of equipment at site / stores is not part of scope of bidder. Bidder shall be relieved of the responsibility once equipment is unloaded at site / stores.	Tender Condition Prevails
42	VOL I SCC - 3			Inspection & Tests	Kindly approve Gulf Lloyds Industrial Services (INDIA) PVT. LTD. third party inspection agency. They are approved by PNGRB.	Bidder may carry out inspection by any PNGRB approved TPIA
43	13 SCC / VOL I			Through direct payment within 45 days from date of receipt of invoice. Payment towards supply, transportation, loading & unloading of Compressor Units at IGL site/store at NCT of Delhi & NCR Region, Installation, commissioning with commissioning spares & Field performance shall be made in following order: i. 90% (Ninety Percent) Payment against above descriptions shall be released on receipt of Compressor Units at IGL store/ site against submission of dispatch documents, LR / GR, manufacturer's certificates, invoice, packing list, insurance policy, guarantee/warranty certificate, inspection release note, dispatch clearance and material receipt certificate issued by Owner. ii. 10% (Ten Percent) Payment against above descriptions shall be released after successful completion of installation, Testing, Commissioning and Performance acceptance Test of each Compressor Unit package at the site and Acceptance thereof by the Owner. iii. In case Installation, Testing & Commissioning and Performance Acceptance Test could not be executed within 120 days from the date of receipt of Compressor Unit package at site/ store due to reasons attributable to Purchaser, the above 10% (Ten Percent) payment shall be released.	Request to modify payment terms as under - 14.1 Payment towards Supply (Compressor Package) Through direct payment within <b>30 days</b> from date of receipt of invoice. i) 90% (Ninety Percent) Payment shall be released against receipt of materials at site on submission of dispatch documents, manufacturer's certificates, invoice, packing list, insurance policy, guarantee/warranty certificate, inspection release note, Goods Receipt Voucher (GRV) & dispatch clearance issued by the Owner. ii) 10% (Ten Percent) Payment shall be released within <b>60 days</b> under either of following conditions pending on behalf of purchaser : (A) Successful completion of installation, Testing, OR, (B) Commissioning of each compressor package at the site, OR, (C) Successful Performance acceptance Test at site pending from purchasers side and acceptance by owner for each compressors,OR, (D) Package lying idle at site / stores	Tender Condition Prevails
44	11 SCC VOL I / Notes to MR Vol II			REASONABILITY OF RATES / Material Requisition	Kindly consider the firm CAMC for 5 years only for contract. For 6th & 7th year we propose 15% escalation, and 20% escalation for 8th, 9th & 10th on YoY basis.	Tender Condition Prevails
45	11 SCC VOL I / Notes to MR Vol II			REASONABILITY OF RATES / Material Requisition	. Kindly consider the FIRM Operation for 5 years only for contract. For 6th & 7th year we propose 15% escalation, and 20% escalation for 8th, 9th & 10th on YoY basis. We recommend that a minimum caping should be maintained by IGL for the minimum wages as above proposal. As per revisions in minimum wages, additional rates should be revised periodically.	Tender Condition Prevails
46	19 SCC Vol I			STATUTORY APPROVALS	Bidder shall be liable for their equipment PESO documentation only. All other statutory approvals shall be in scope of Owner/Purchaser.	Tender Condition Prevails

47	7.3.1 VOL II			PENALTY TOWARDS EXCESS GAS CONSUMPTION	<p>The value of 'G' shall be combination of below conditions ::</p> <p>( 1 ) The value of 'G' for vent loss shall be taken from the vent mass flowmeter. As per compressor design logic venting is only possible through rod packing seals and our block being of pressurized crankcase design, there is no vent loss during compression. Hence vent mass flow meter is not applicable for us but same shall be applicable for bidder's offering block with non-pressurized crankcase.</p> <p>( 2 ) The value of 'G' for leakage :: The individual mass flowmeter comes with batch accuracy of +/-0.5% . Hence instrument accuracy as indicated by OEM i.e +/-0.5% per mass flowmeter to be considered.</p>	Tender Condition Prevails
48	7.3.2 VOL II			PENALTY TOWARDS EXCESS POWER CONSUMPTION	<p>Machine is subjected to intermittent start / stops based on the load &amp; power consumption at station. The gas density varies throughout the month and instrument batch accuracy as indicated by MFM - OEM i.e +/-0.5% per mass flowmeter to be considered. Hence establishing the variations in power consumption figures than the quoted consumptions need consistency of above three factors. Accordingly, we suggest on monthly basis bidders should demonstrate the actual fuel figures during operation &amp; same should be compared with quoted figure to impose penalty.</p>	Tender Condition Prevails
49	7.3.3 VOL II			PENALTY FOR PACKAGE EFFICIENCY LOSS	<p>For penalty towards package efficiency loss, only the operational load hours of the m/c to be considered for calculating capacity. Formula for e.g., Total hours - Unloading hours = Loaded hours.</p> <p>OR</p> <p>Maximum efficiency of the package to be considered as 98% due to frequent start stop of the m/c which is a common feature at CNG stations occurring due to load conditions. None of the Compressors are designed to start / stop immediately on load condition for safe operation. Also during unloading conditions, compressors cannot deliver capacity. Hence, maximum efficiency of the package to be considered as 98%.</p> <p>The suction pressure at Compressor package inlet PT shall be considered for calculating flow, power &amp; efficiency.</p>	Tender Condition Prevails
50	7.3.4 (a) VOL II			<p>Penalty for Non-Performance during period of Operation &amp; Maintenance.</p> <p>9.7.3.2 Details of Penalty for non-performance of equipment</p> <p>(a) On normal day &amp; in case of breakdown (i.e. the day other than the schedule maintenance day):</p>	<p>Maximum penalty of 50% will be acceptable &amp; applicable only on maintenance charges including breakdown beyond 15 days, Efficiency, Package fuel consumption &amp; gas loss if any.</p> <p>IGL shall release operation charges without any deduction.</p>	Tender Condition Prevails
51	7.3.4 (b) VOL II			(b) On Schedule Maintenance day (i.e. excluding periodic major overhaul of compressor/motor):	<p>Maximum penalty of 50% will be acceptable &amp; applicable only on maintenance charges including breakdown beyond 15 days, Efficiency, Package fuel consumption &amp; gas loss if any.</p> <p>IGL shall release operation charges without any deduction.</p>	Tender Condition Prevails
52	10 VOL II			FIELD TRIAL RUN (Commissioning and Commercial Operation)	<p>Kindly accept field trial run for only Four (4) hours cumulative basis.</p>	Noted

53	13.0 - VOL II			<p><b>OPERATION &amp; MAINTENANCE SERVICES</b>  The date of successful performance test (PT) at site (which shall be conducted within 90 days from the date of successful commissioning of the machine) will be considered as date of start of the annual maintenance contract. However, bidder shall be paid only 50% of O&amp;M charge for operation and maintenance of the compressor from the date of commercial operation upto the date of performance test as part payment against O&amp;M till the capacity and other guaranteed parameters of the package is established through PT. The balance 50% of O&amp;M charge (from the date of commercial operation upto the date of PG test) shall be released to the bidder subsequent to successful PT (ie, after establishing all the guaranteed parameters as per tender) In case the PT is not successful, the balance 50% shall be forfeited in addition to provision of cl. 7.3-A of this Section. The bidder must follow the 'OPERATION &amp; MAINTENANCE REQUIREMENT' as stated below but not limited to and ensure to provide trouble free services to the satisfaction of the owner</p>	Request site acceptance test (PT) to be conducted immediately after commissioning of equipment is completed. In case PAT is delayed due to reasons attributable to IGL, then post commissioning the CAMC charges shall be paid 100% to the bidder.	Tender Condition Prevails
54	4.1.5 Vol II			Note that the pressures given on the data sheet are at the compressor package battery limits, bidder shall consider all pressure losses at suction, interstage and discharge at the specified capacity (with no -vetolerance) for compressor and indicate the same on the data sheets.	We shall consider 16 Kg/cm2G pressure at compressor suction flange for compressor sizing.	Tender Condition Prevails
55	Vol I			23.2 Operation & Comprehensive Maintenance Period Bidder shall provide Operation & Comprehensive Maintenance during warranty period. Warranty period shall be as defined in tender document. However, maximum duration of contract for operation & comprehensive maintenance shall be limited to 18 months from the date of receipt of last Compressor of each lot at IGL store / site.	Warranty Period will be applicable 12 month from date of operation and 18 month of LR copy, whichever earlier	Tender Condition Prevails
56	Vol I			Old spares removed during any type of maintenance activity will be submitted to IGL by vendor. However, vendor will have to take care for disposal of consumables like waste oil, O Rings, Gaskets, Grease, Waste cloth etc. Waste oil collection and disposal in safe manner shall be done by the vendor only.	Since this is CAMC contract hence all the consumable and spare parts belong to CP only.	Tender Condition Prevails
57	Technical Vol II Page 31			7.1 Bidder shall guarantee 600 SCMH capacity of compressor with given gas composition, at suction pressure of 16 kg/cm2(g) and at suction temperature of 300 C, discharge pressure of 250 kg/cm2(g) with no negative tolerance for errors in instruments and measurements	we under stand here suction temperature in 30 °C instead of 300 °C. . please clarify	Bidders Understanding is Correct
58	Technical Vol II Page 31			Since the compressor suction pressure varies from 14 kg/cm 2 g to 19 kg/cm 2 g at present, the compressor shall be suitable to deliver flow corresponding to 14 and 19 kg/cm2 (g) at present.	Compressor will deliver the suitable flow at 14 to 19 kg.cm2, but operation penalties should be consider only as per GP sheet, if machine is not running on guaranted parameter due to site issue then penalties should not be applicable	Tender Condition Prevails
59	Technical Vol II Page 32			<p><b>A. Package Gas Loss:</b>  The bidder shall design the compressor package so that no venting and leakage of gas takes place. Bidder shall indicate actual vent &amp; leakage losses through the compressor package. If package loss is quoted more than 1% of suction capacity gas consumption than bid shall be rejected. This quoted figure will be used for evaluation and total quoted price for all compressors towards supply, special tools and tackles, transportation, erection &amp; commissioning, operations and comprehensive maintenance will be calculated as per following formulas:  <math>F = G \times H \times I \times X \times N \times W</math></p>	Instrument error/instrument accuracy shall be consider as per OEM recomandation for gas loss penalty	Tender Condition Prevails
60	Technical Vol II Page 33			7.3.1 Penalty towards Excess Package Gas Loss: During the O&M period, cost towards excess gas loss beyond the quoted figure shall be deducted from O&M bills. Following calculations shall be used for deduction towards excess gas loss: $F = 1.2 \times [(G-(Q^*D)) *H]$	Instrument error/instrument accuracy shall be consider as per OEM recomandation for gas loss calculation	Tender Condition Prevails
61	Technical Vol II Page 33			7.3.2 Penalty towards Excess Energy Consumption: During the O&M period, cost towards excess energy consumption beyond quoted figure shall be deducted from O&M bills. Following calculations shall be used for deduction towards excess energy consumption. $F = 1.2 \times [(G-Q) \times H]$	Minimum 4 hrs compressor continues running required to calculate the energy consumption, if sufficient load not availbale at site than penalties of excess energy consumption will not be applicable	Tender Condition Prevails



62	Technical Vol II Page 33			7.3.3 Penalty towards Package Efficiency Loss Rs. 5/ Kg will be recovered for delivering each kg lesser than the rated capacity & following calculations shall be used: $F = 5 \times \{(600 \times H \times RD \times AD) - M\}$	Minimum 4 hrs compressor continues running required to calculate the Package Efficiency, if sufficient load not available at site than penalties against Package Efficiency will not be applicable or considering the machine switching (Auto stop and start ) penalties shall be applicable on or below 96% efficiency	Tender Condition Prevails
63	Technical Vol II Page 33			For GAs Muzaffarnagar, Rewari, Kaithal and Karnal penalty over breakdown upto 6hrs shall be considered nil. For GAs Ajmer, Rajsamand, Pali, Kanpur, Banda and Chitrakoot or in any other future coming remote GAs in IGL's periphery penalty over breakdown upto 8 hrs shall be considered nil. However, rest slabs for penalty shall be same as considered for Delhi, Gautam Budh Nagar, Ghaziabad and Gurugram GA. b. On schedule maintenance day (excluding periodic major overhaul of compressor/ motor): i. If the equipment is down for beyond the time indicated for the agreed schedule maintenance, the party would be penalized as per follows(for NCT of Delhi, Gautam Budh Nagar, Ghaziabad, Hapur & Gurugram): <input type="checkbox"/> Upto 4 hours: Nil <input type="checkbox"/> 4 hours to 12 hours: Rs. 10,000/- per instance <input type="checkbox"/> 12 hours to 24 hours: Rs. 15,000/- per instance <input type="checkbox"/> More than 24 to 72 hours: Rs. 25,000/- per instance ii. In addition to above, if case there is a continuous breakdown beyond 72 hours up to 15 days of a calendar month, 50% of monthly maintenance charges excluding operational part will be deducted. iii. In case there is a continuous breakdown beyond 30 days of a calendar month, Entire Monthly Maintenance and operation charges shall be deducted	on point iii, Operation charges shall be payable to site engaged team (operation)	Tender Condition Prevails
64	1.6			Gas meter (2 nos.): Mass flow meter (with integral local display to measure gas flow at package inlet & package discharge) based on Coriolis principle and as per AGA-11. The mass flow meter shall be W&M approved. While installing special care shall be taken to isolate the mass flow meter from piping vibration. Additionally, Thermal type mass flow meter to be provided to measure package gas loss/vent.	Offered compressor package consist of pressurised crankcase, so there will not be any gas loss like packing loss, seal loss etc. so same is not required hence not considered.	Tender Condition Prevails
65	4.7.3			Digital no flow timer shall be provided to stop the compressor in case of loss of cylinder lubrication.	OEM standard, Common Digital No Flow Switch (time based) will be provided. - When there is no – pulse ( from cylinder lubrication - divider block) for certain time interval, the switch toggles & the compressor is tripped on lubrication fault.	Noted
66	4.8.2			<b>Inter / After Gas Coolers</b> Air-cooled inter-stage and final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to 55OC. For calculating the surface area of the air cooler the ambient air temperature of 47OC and 90% RH shall be considered. Cooler design shall be on the basis of 20% excess capacity than required corresponding to suction pressure of 19 kg/cm2. Gas sections of coolers shall be designed as per API-11P requirements and shall be inspected by any approved 3rd party inspection agency. The Gas and water sections shall not be "U" code stamped but TPI inspected. For cooling of the Heat Exchangers a cooling fans to be provided inside the enclosure(s). Cooling system shall be preferably installed on the same skid as the compressor due to space constraints. Bidder shall submit cooler sizing calculation for review/ records	The approach would be above ambient temperature 10°C. (max. ambient temp. 42°C + 10°C = 52°C). The Gas cooler design shall be such that suitable to the application as per manufacturers design. Gas coolers of the design shall be designed as per ASME-SEC-VIII, as per manufactures standard design approach same is proven for earlier supplied packages. - Cooler sizing calculation is proprietary, so not feasible to submit..	Please refer the clause 4.8.2, Technical Volume - II of subject tender.

67	6.2		<p><b>Mechanical running test (MRT)</b>  The MRT for the each compressors shall be carried out in presence of PURCHASER/CONSULTANT with job or shop driver including complete job driving system i.e., job driven V-belt, job pulleys etc., for 4 hours continuously at shop of compressor manufacturer. The compressor need not be pressure loaded for MRT test. During this test following shall be recorded at agreed intervals.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Vibration levels measured on cylinders and frame</li> <li><input type="checkbox"/> Bearing temperature</li> <li><input type="checkbox"/> Oil cooler inlet and outlet temp</li> <li><input type="checkbox"/> Sound level</li> </ul> <p>Subsequent to satisfactory run the compressor shall be examined as per standard procedure &amp; following shall be examined as minimum: Internal Inspection certificate for strip test after no-load run of compressor is to be submitted for review of client / consultant.  Strip test is limited to open Crank Case cover, X-Hd guide &amp; distance piece Cover and opening of bore &amp; other parts, piston, one valve per cylinder. Visual examination of position rod  If any of part found damaged, all similar components shall be stripped for inspection. The MRT test shall be repeated after replacement of such parts. All the interlocking and performance of the instrumentation system will be verified during the MRT.</p>	<p>MRT will be carried out as per OEM std.</p> <p>following shall not be feasible during FAT</p> <ul style="list-style-type: none"> <li>• Bearing temperature- Not applicable for Flp. motors</li> <li>• Oil cooler inlet outlet temperature not considered.</li> <li>• Sound level- Not feasible to unavailability of free field.</li> </ul> <p>Strip test-As it is not possible to disassemble any part pf the compressor Package after assembly &amp; Testing</p>	Tender Condition Prevails
68	6.3		Mechanical String Test	<p>Test will be limited to witness of Performance Parameters as per Factory Acceptance Test (FAT) at full load on CNG fuel, However The test will not comprise of disassembly of any of component of Package for witness.</p>	Tender Condition Prevails
69	1.1		Motor shall be TEFC squirrel cage induction motor(4 pole) in standard frame size as per IS/IEC rated for continuous duty with premium efficiency(IE3 or Better) and designed for VFD starting.	<p>We will recommend Soft starter instead of VFD panel with IE2 efficiency, kindly accept</p>	Tender Condition Prevails
70	1.6		Separate flameproof junction boxes for different type of signals like analog, digital signals, alarm, shutdowns, and thermocouples, RTDs etc. for interfacing to FLP local panel. Same is not applicable for direct run cable up to PLC panel.	<p>LCP (With PLC) is mounted on package itself hence separate JB's are not required.LCP (With PLC) is mounted on package itself &amp; also separate gauge box will be used for intrinsically safe signals.</p>	Direct run cable upto PLC/ local panel, Junctions box is not required; rest tender condition prevail.
71	1.6		Common structural steel skid for the compressor- electric motor and for all auxiliary systems.	<p>All auxiliaries like CO2, Air compressor, PRS Skid etc will be supplied loose &amp; to be mounted away from package.</p>	Tender Condition Prevails
72	1.6		Each stage outlet temperature before cooler & after cooler to be displayed on PLC.	<p>Each stage temp before cooler &amp; after cooler will be displayed on Gauge panel. In addition to this Temperature Transmitter provided at for PLC display to monitor temp at each stage.</p> <ol style="list-style-type: none"> <li>1) Compressor suction</li> <li>2) 1st stage discharge</li> <li>3) 2nd stage discharge</li> <li>4) 3rd stage discharge</li> <li>5) Aftercooler outlet</li> </ol>	Tender Condition Prevails
73	1.6		Supply, Laying and Termination of following cables including all erection accessories like Lugs, Glands etc is included in the scope of bidder:	<p>All field cables will not considered in bidder scope as site to site location vary hence not considered, please accept.</p>	Tender Condition Prevails
74	1.6		The Compressor Package shall trip if any of the enclosure is opened while the machine is running.	<p>Due to uninterrupted running of machine same is not recommended by OEM.</p>	Tender Condition Prevails

75	2.1.1			<p>Bidder shall make his own provision for Instrument air with the flame proof electric motor driven air compressor, receiver and refrigerant type air dryer system.</p> <p>Air compressor preferably of IR/KPCL/Elgi/CP make having capacity of approx. 10 2 kg/cm2(g) discharge pressure (with minimum flow rate of 10 CFM), and 500 water liter capacity. Air receiver shall be supplied for each CNG compressor package. Air dryer suitable for automatic operation shall also be supplied along with all accessories. The air compressor motor&amp; air dryer shall be flameproof and will be kept in CNG area. Piping, electrical and instrumentation cabling shall be in bidder's scope.</p> <p>Tapping in the 500WL air receiver vessel shall be provided with NRV, PRV (If required) and isolation valve for CNG dispenser instrumentation line. Air receiver shall be provided with SRV (safety relief valve), pressure gauge and drains. Manual drains and automatic moisture traps/moisture separator cum regulator shall be provided in the system.</p>	<p>Suitable air compressor non flameproof with discharge pressure 10 barg shall be provided along with all required accessories. Instrument &amp; starting air provision as per OEM standard, desired pressure will set at receiver</p>	Tender Condition Prevails
76	2.1.7			<p>Purchaser shall provide UPS (220 □ 1 % V, 50 □ 1 % Hz) for control supply requirements at a single point (feeder in UPS ACDB) inside the electrical room. Bidder shall indicate power/ feeder (KW/Amp) requirement in the offer. Surge protection devices of approved make shall be provided for all incoming supply to Bidder's end.</p>	<p>we have excluded UPS from our scope. Kindly confirm the same.</p>	Tender Condition Prevails
77	2.2.4			<p>As and where specified on the data sheets all vents (i.e. Relief valve, distance piece and packing) shall be manifolded and terminated at skid edge outside the enclosure and vented to safe height of 3 m at package roof.</p>	<p>Distance piece will be as per OEM standard. Venting is not applicable due to pressurised crankcase.</p>	Tender Condition Prevails
78	2.2.6			<p>UPS and Non UPS power shall be made available from power distribution board (PDB) in the electrical room. Supply, Erection and termination of all cables and accessories from feeder in electrical room shall be in the bidder's scope.Approx distance of the CNG compressor package shall be 100 m from electrical room.</p>	<p>All field cables will be in the scope of IGL</p>	Tender Condition Prevails
79	2.2.7			<p>The Bidder work shall commence from Outgoing terminals of PDB/ACDB/LDB (PDB/ACDB/LDB is in the scope of Owner).Downstream distribution arrangement from the PDB to the Compressor is in the scope of Bidder.</p>	<p>All field cables will be in the scope of IGL</p>	Tender Condition Prevails
80	2.2.8			<p>Electronic earth pit shall be made available at a distance of about 5 meters from compressor package. Cable from this earth pit shall be in the bidder's scope. Owner's earthing main ring shall be made available at compressor foundation. Cable to control panel body earth inside the compressor package shall be in the bidder's scope.</p>	<p>All field cables will be in the scope of IGL</p>	Tender Condition Prevails
81	4.9.1			<p>Carbon Steel separators / KOD volume bottles with auto and manual drain system shall be provided for the capacity as required.</p>	<p>All the separators with auto drain system over manual drain system considered for safety reasons, only ORV with manual drain considered. Drain system will be time bases as per OEM standard offering.</p>	In case of proprietary design of the offered compressor, the same can be accepted subject to submission of PTR of the offered compressor
82	4.9.3			<p>Scrubber service class - B shall be used for Inter-stage / discharge scrubbers. Service Class - C shall be used for suction scrubber. (Refer API -11P)</p>	<p>Suction KOD as per Manufacturer standard design will be provided.</p>	In case of proprietary design of the offered compressor, the same can be accepted subject to submission of PTR of the offered compressor
83	4.12.3			<p>Heat Exchanger / gas cooler fan shall have mechanical drive only and the same cannot be utilized as ventilation fan.</p>	<p>Gas cooler fan is electric motor driven as per previous supplied packages.</p>	Noted
84	4.12.7			<p>All the pressure, temperature, gas flow meter, oil level, lube oil pressure, coolant temperature, coolant level indicators shall be visible from outside of enclosures. enclosures as per the design of the manufacturer through gauge panel. However if due to space constraint some of the Instruments not visible from outside of enclosure then proper accessibility has to be provided for reading the parameters from the Instruments. The Flow meters shall be installed in such a way that if required reading can be taken safely on running of compressor during performance testing.</p>	<p>All the indicators for pressure, temperature of gas shall be visible from outside of enclosures. For rest of the parameters same can be viewed from PLC/locally.</p>	Tender Condition Prevails
85	4.12.11			<p>One vent line with double isolation valve shall be provided to emptying the package at 3rd stage separator.</p>	<p>Due to safety reason vent line not provided at 3rd stage separator, venting prvision is provided at BDV with double isolation valve</p>	Tender Condition Prevails

86	4.12			Piping	Gas piping/ tubing at 3rd stage discharge will only be in SS-316, with SS fittings.  Rest all piping /tubing will be Combination of Flanged & screwed connections with CS material (pipes, Fittings & Flanges ) as per application requirement & standard design.  This is as per manufacturing standard design.	Noted & will be reviewed during detailed engg. & may be accepted if found technically suitable.
87	4.12			Piping	Piping between PRS Skid to Inlet of Compressor Package, air compressor & CO2 piping upto enclosure will be in IGL scope, as site to site location is not fixed, hence request to considered same.	Tender Condition Prevails
88	4.12.5			The instrument air tubing material shall be SS316 as per ASTM A269.	Instrument air tubing shall be SS304.	Noted
89	4.12.10			External drain & vent piping shall be Carbon Steel and not less than 1" nominal size. However, all the internal drains shall be SS 316 tube as per ASTM A269. However all the internal drains shall be SS 300 series material.	Package oil drain will be of 1/2" as per manufacturer standard	In case of manufacturer's standard for piping size of package oil drain, the same can be accepted subject to submission of PTR of the offered compressor. Rest Tender Condition Prevail.
90	8.2			PAINTING AND PROTECTION	Painting shall be as per manufacturer's standard procedures. Package enclosure shall be Powder Coated ensuring longer durability in all weather out door installation conditions.	Tender Condition Prevails
91	1.1.7.3 iv.			The design of control panel shall incorporate provision for expansion by installing adequate spare capacity. Each panel shall be designed to accommodate the following additional equipment, as a minimum; a) 20% of panel front/inside mounted instruments including lamps, push buttons, switches, relays etc. b) 20% additional power feeders each provided with switch fuse assembly. c) 20% spare cable entry points. d) 20% spare TBs with fuses shall provide	Spare I/O shall be as per approved Control Panel drawing approved by IGL.	Tender Condition Prevails
92	1.9.4. 1.9.17.			Electrical instrumentation shall be certified by a recognized authority such as BSEIFA,PTB, LCIE, CESI, INIEX, CSIR ,CEA or any agency approved by Indian Government	CCOE or its equivalent certificate (FM, CSA , ATEX, UL, CMRI) whichever applicable & available will be provided.  All Test certificates will be as per approved QAP	All electrically operated Instruments shall have mandatorily PESO certification; rest tender Condition Prevails
93	1.9.6.			Separate junction boxes shall be provided for each type of signal i.e., analog, digital, solenoids, RTD thermocouple and power supply. Instrument junction boxes should not have any high voltage connection.	LCP (With PLC) is mounted on package itself hence separate JB's are not required.LCP (With PLC) is mounted on package itself & also separate guage box will be used for intrinsically safe signals.	Direct run cable upto PLC/ local panel, Junctions box is not required; rest tender condition prevails.
94	1.9.18.			Compressor package shall be provided with the following indicators: i. Pressure indicator each stage suction and discharge. ii. Temperature indicator each stage suction and discharge iii. Oil pressure indicator on each pressure lubrication system iv. Oil levels indicator, field mounted v. Air pressure low indicator vi. Hour meter vii. Non- resettable electromechanical hour meter on local control panel. viii. Hydraulic oil cooler inlet & outlet temperature on local gauge panel (if required) ix.Low oil level protection devices xv. RPM indicator shall be in gauge panel	All instrument will be provided as per finalised approved P&ID. Approved by IGL.	Tender Condition Prevails
95	1.9.18.			The compressor package shall be furnished with the following trip logic ( but not limited to) that shall stop the compressor and suction of compressor shall be isolated: xii. Low fuel pressure xiii. Flow through the vent line	xii. Low fuel pressure - Not applicable xiii. Flow through the vent line trip logic not considered.	xii. Noted  Rest Tender Condition Prevails
96	1.9.18.			First port shall be for remote monitoring of the parameters. Besides PLC display, all the parameters which are measured should be monitored on a HMI/ MMI for remote monitoring as well as of remote operation with RTU/ SCADA communication over TCP/IP Modbus protocol. Vendor shall provide protocol details to OWNER and also provide necessary support for third party interface for remote data connectivity.	SCADA port is provided. SCADA is not considered in bidder's scope. Ethernet port is provided for customer SCADA communication. SCADA compatibility is provided for remote monitoring.	Necessary suitable ports as per tech spec shall be provided. The SCADA communication will be over TCP/IP Modbus protocol. The offered equipment must be suitable for tender requirement. Tender Condition Prevails

97	ANNEXURE -1			Compressor Instrumentation	We shall provide instruments as per P&ID submitted and Instrument schedule for approval. Following not considered : 1. Frame Oil Sump/Reservoir Level : Switch not considered. 23. Coolant main pump disch. Pr.-NA as compressor is air cooled. 28. Coolant cooler Outlet Temp.-NA as compressor is air cooled. 29. Coolant reservoir Level-NA as compressor is air cooled. 42. Final Disch Pressure after coalescent filter *- Low alarm and trip not considered. 53. Temp before and after Air cooler- Each stage Outlet temp and for after coollet before after will be provided. *Smart type pressure transmitter at suction and discharge shall not be considered, Piezo resistive type will be provided.	Tender Condition Prevails
98	1.2.			VARIABLE FREQUENCY DRIVE PANEL a. Variable Frequency Drive shall be provided as starter panel for the Electric motor. b. Continuous current of Variable Frequency Drive shall be 110% of Electric motor's rated full load current. Current rating of VFD shall be calculated considering all derating factors as applicable at 50 degree ambient temperature.	We will recommend Soft starter instead of VFD panel with IE2 efficiency, kindly accept	Tender Condition Prevails
99	1.5.			CABLING FOLLOWING CABLES SHALL BE SUPPLIED, LAID AND TERMINATED BY BIDDER: a) All the cables (control, signal communication and power) inside the compressor package (starting from VFD Panel in Control room/Electrical room). b) Distance between VFD Panel installed at site to compressor package installation shall be considered as average 100 Mtrs for all type of cables such as control, signal communication and power cables etc. However, length of all the cables shall be provided as per the site requirement, without any financial implication. For each Item, total calculated length of all type of cables shall be supplied in a single drum (for each type) along with the compressors pkg of the 1200 / 600 SCMH. c) Power and signal communication cables from compressor to trailer panel, if trailer panel is indicated in SOR (distance 20 m approx). d) Cable for Emergency Shutdown buttons (ESDs). e) Termination of cables in compressor control panel, VFD panel, motors, etc. including cable lugs and brass double compression cable glands etc. is in bidder's scope. f) All Cable glands shall be brass metallic and double compression and all lugs shall be copper metal, and shall be suitable as per hazardous area classification.	All field cables will not considered in bidder scope as site to site location vary hence not considered, please accept.	Tender Condition Prevails
100	21			QUALITY ASSURANCE PLAN	Inspection & Testing will be as per final approved QAP	Noted
101	22			Preferred makes GD & FD Ball Valve Check Valves Instrument SS fittings/valves Discharge Filter SUCTION FILTER	Shall be as per final approved vendor list. Kindly approve below makes : PPS ( pollution protection systems ) PHBB Parker Baumer OEM Approved R S Instrumentation, J G Acero Industries pvt	Kindly refer Note 1 & Note 2 of Preferred makes (Clause No. 22 of Technical volume of Tender).