



CORRIGENDUM #1

TENDER FOR PROCUREMENT OF 650 SCMh ONLINE GAS ENGINE DRIVEN COMPRESSOR

Tender No.: RSGL/KOTA/C&P/2019-20/01

Dated: 10.10.2019



Sl. No.	Clause No.	Page No.	Description	Amendment/ Addition/ Modification/ Deletion	Details
1	5.10	48	Coalescent super fine filters (preferably two stage) with CE mark / Third party certification for removal of liquid (e.g. water & oil) and solid particles down to 0.1 microns out of compressed natural gas shall be provided. Residual Oil Contents shall be less than 1 PPM. Automatic drains with On-off valve connected to Gas recovery vessel shall be provided. The filter should be sized to flow min. 200% of the flow at suction pressure of 19 kg/cm2g. However mechanical design shall be based on safety set pressure.	Amendment	Coalescent super fine filters (preferably two stage) with CE mark / Third party certification for removal of liquid (e.g. water & oil) and solid particles down to 5 microns out of compressed natural gas shall be provided. Residual Oil Contents shall be less than 5 PPM. Automatic drains with On-off valve connected to Gas recovery vessel shall be provided. The filter should be sized to flow min. 200% of the flow at suction pressure of 19 kg/cm2g. However mechanical design shall be based on safety set pressure.
2	f	66	Inspection testing for Indian bidder: Owner/Consultant shall carry out Inspection and testing as per QAP, inspection charges shall be considered @1.0% of the exworks price excluding duty and taxes of the equipment for price evaluation purpose only. Domestic bidder shall also arrange 3rd party for inspection as indicated in QAP and expenses on third party inspection including fees payable and arranging the same shall be borne by bidder.	Amendment	Inspection testing for Indian bidder: Owner/Consultant shall carry out Inspection and testing. Domestic bidder shall also arrange 3rd party for inspection as indicated in QAP and expenses on third party inspection including fees payable and arranging the same shall be borne by bidder.
3	9.4	68	Air/N2 can be used for string test purpose if natural gas is not available in the shop.	Amendment	Natural gas can be used for String test in the shop.
4	8.1.5	89	ASME CODE STAMP	Amendment	Design Code - ASME SEC VIII DIV 1 Latest
5	3.1	14	Lubricated or non-lubricated two throw balanced opposed reciprocating compressor with lube oil system and cooling system (console type) as required.	Amendment	Lubricated or non-lubricated two throw balanced opposed/ Trunk Piston reciprocating compressor with lube oil system and cooling system (console type) as required.
6	2.0	38	API-11P (Second edition), ISO 13631-2002	Amendment	API-11P (Second edition), ISO 13631-2002 / Trunk Piston
7	Guaranteed Parameters - Notes	35	Bidder shall indicate the specific fuel consumption kg/hr/Kw and the fuel consumption (above defined compressor capacity) in SCMh as guaranteed value in the offer on the design case gas composition. The guaranteed value of fuel consumption of gas engine in SCMh shall be between 23 and 25 SCMh corresponding to flow of 650 SCMh for the given gas. Bidder shall not be given any credit/advantage for quoting fuel consumption below the lower limit. But in case the fuel consumption quoted by the bidder exceeds the upper limit, the bid will be rejected. Therefore, bidders are requested to indicate the fuel consumption very carefully. Fuel consumption of all the techno-commercially qualified Bidders shall be compared with respect to the lowest SCMh quoted by any Bidder within the range 23 to 25 SCMh. Even if any bidder quotes less than 23 SCMh as fuel consumption by engine for running the package, 23 SCMh will be considered as fuel consumption by packager for price loading purpose. All other bidders shall be loaded as per differential cost evaluated as per formula mentioned in technical specification over and above the total evaluated price.	Modification	Bidder shall indicate the specific fuel consumption kg/hr/Kw and the fuel consumption (above defined compressor capacity) in SCMh as guaranteed value in the offer on the design case gas composition. Bidders are requested to indicate the fuel consumption very carefully. However, Loading & Penalty criteria will be as per clause No. 10.7.1 & 10.7.2 of technical specification respectively
8	9.4	67	9.4 Mechanical String Test Mechanical String Test for 4 hrs shall be performed at packager's shop before dispatch in presence of Purchaser/Consultant. This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver, lube Oil system is used for the test. Air/N2 can be used for string test purpose if natural gas is not available in the shop. All parameters including discharge pressure shall be demonstrated. All the interlocking and performance of the instrumentation system will be verified during the MST. String test at unload condition is not acceptable. 9.5 Package Performance Test Bidder shall send fully assembled package including auxiliary systems, instrumentation, safety devices within the enclosure to the site and carry out the performance test at site before the commencement of 72 Hours Field Trial Run. Complete package shall be performance tested as a module whereby along with electric motor / gas engine & compressor performance bidder shall demonstrate all controls, shutdown, trips/alarms etc. The test shall be the basis of assigning penalties on the bidder, acceptance/rejection of the package thereon. Bidder shall submit the detail test procedure for the same, which shall be approved by Client. The test for the package shall be witnessed by Client representatives.	Amendment	9.4 Mechanical String Test Mechanical String Test for 4 hrs shall be performed at packager's shop before dispatch in presence of Purchaser/Consultant. This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver, lube Oil system is used for the test. Air/N2 can be used for string test purpose if natural gas is not available in the shop. All parameters including discharge pressure shall be demonstrated. All the interlocking and performance of the instrumentation system will be verified during the MST. String test at unload condition is not acceptable. 9.5 Package Performance Test Bidder shall carry out 100 % Load performance test for fully assembled package including auxiliary systems, instrumentation, safety devices within the enclosure at Packager's plant for 4 hours. Complete package shall be performance tested as a module whereby along with electric motor / gas engine & compressor performance bidder shall demonstrate all controls, shutdown, trips/alarms, Gas consumed, BkW etc. The test shall be the basis of assigning penalties on the bidder, acceptance/rejection of the package thereon. Bidder shall submit the detail test procedure for the same, which shall be approved by Client. The test for the package shall be witnessed by Client representatives.
			10.7.1 Loading Bidder shall indicate the specific fuel consumption kg/hr/BKW and the total fuel consumption (above defined compressor capacity) in kg/hr as guaranteed value in the offer. The offers shall be loaded for the fuel consumption as given under The loading per package shall be the differential cost evaluated as follows; Total cost of the package for evaluation purpose (A+B+C) Where A: Capital cost of each package including cost of erection, commissioning, and		10.7.1 Loading Bidder shall indicate the specific fuel consumption kg/hr/BKW and the total fuel consumption (above defined compressor capacity) in kg/hr as guaranteed value in the offer. The offers shall be loaded for the fuel consumption as given under The loading per package shall be the differential cost evaluated as follows; Total cost of the package for evaluation purpose (A+B+C) Where



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9	10.7.1	69	<p>special tools and commissioning spares B: Cost of Mandatory spares (Each Package) C: Differential operating cost as defined hereunder Differential operating cost (C) $C \text{ (in Rs)} = Nop \times (Fe - Fr) \times Cf \times Df$ Where Nop : 8000 Hrs Fe : Guaranteed fuel consumption in SCM/Hr for bidder under evaluation Fr : Lowest Guaranteed fuel consumption SCM/Hr (amongst technical accepted bidder) Cf : Cost of fuel as Rs 32 / SCM Df : discounting factor to arrive at Net Present Value (NPV) based on 5 years i.e. 3.274 Maximum loading shall be limited to 10% of the total quoted cost i.e. A+B as defined above and shall be applicable for all the packages ordered. 10.7.2 Penalty In case during shop performance test of compressor package the fuel consumed in terms of SCM/hr, to achieve the guaranteed compressor capacity of 650 SCM/Hr is found more than 10% the entire package shall stand rejected. However, for every extra SCM/hr consumed over and above the guaranteed value upto a maximum of ten percent the Bidder shall be penalized for extra fuel consumption. The penalty per package shall be the differential cost calculated as follows: PY = Penalty Cost FT = Fuel consumption as obtained from field test in terms of SCM/hr FG = Guaranteed fuel consumption in SCM/hr CF = Rs. 32 /SCM DF = 3.274 (Discounting factor based on 5 years of operating years) The total penalty to be charged for non-conformance of guaranteed parameter shall not exceed 10% of the ordered value i.e. A+B as defined above.</p>	Amendment	<p>A: Capital cost of each package including cost of erection, commissioning, and special tools and commissioning spares B: CAMC for 2 year post warranty period C: Differential operating cost as defined hereunder Differential operating cost (Dc) $Dc \text{ (in Rs)} = Rh \times (Gf - Lf) \times Cf \times Df$ Where Rh : 6570 Hrs (18 Hrs Per Day Running) Gf : Guaranteed fuel consumption in SCM/Hr for bidder under evaluation Lf : Lowest Guaranteed fuel consumption SCM/Hr (amongst technical accepted bidder) Cf : Cost of fuel as Rs 32 / SCM Df : Discounting factor to arrive at Net Present Value (NPV) based on 5 years i.e. 3.274 10.7.2 Penalty During compressor package performance test, in case the compressor package fails to meet the guaranteed values, the following penalties shall be imposed. In case during shop performance test of compressor package the fuel consumed in terms of SCM/hr, to achieve the guaranteed compressor capacity of 650 SCM/Hr is found more than 10% the entire package shall stand rejected. However, for every extra SCM/hr consumed over and above the guaranteed value upto a maximum of ten percent the Bidder shall be penalized for extra fuel consumption. The penalty per package shall be the differential cost calculated as follows: $PY \text{ (in Rs)} = (Pt - Pg) \times Cf \times 6570 \times Df$ PY = Penalty Cost Pt = Fuel consumption as obtained from field test in terms of SCM/hr Gf = Guaranteed fuel consumption in SCM/hr Cf = Rs. 32 /SCM Df = 3.274 (Discounting factor based on 5 years of operating years)</p>
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<div>  <div> REPLIES TO BIDDER'S QUERIES PROJECT : PROCUREMENT OF 650 SCMH ONLINE GAS ENGINE DRIVEN COMPRESSOR Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019 </div> </div>						 RAJASTHAN STATE GAS LIMITED राजस्थान राज्य गैस लिमिटेड
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
1	Commercial Volume I of II for Supply of Compressor	11	2.1 (ii)	Installation, testing and commissioning shall be completed within 4 Weeks from date of issuance of letter for readiness of site	Installation, testing and commissioning should be completed within six months from the date of dispatch of compressor from bidders works. Please note that, price quoted for Installation, testing and commissioning cannot be kept valid beyond six months from the date of dispatch of compressor from bidders works.	Tender Conditions shall prevail.
2	Commercial Volume I of II for Supply of Compressor	13	3.1 (d)	Certificate from any reputed Third-Party Inspection Agency as specified in tender that the proposed workshop / facility has the capability for fabrication / assembly / testing complying the specifications of the quoted item / equipment. The said certificate shall not be older than one year reckoned from bid due date.	Please clarify whether a self certified description of proposed workshop / fabrication capabilities / testing facilities provided by bidder is acceptable. A third party cannot issue a certificate regarding bidder's capability to execute an order. Also we are providing completion / performance certificates of similar packages supplied in the past which themselves establish the adequate capability of the bidder.	Bidder to furnish ISO 9001: 2015 certificate in support of this clause.
3	Commercial Volume I of II for Supply of Compressor	146	17.1	Where the Supplier is required under the Scope of the Contract to transport the Goods to a specified place of destination or to Site, the Supplier shall transport to such place of destination or site, as the case may be, including insurance and storage, if required. The Contract Price will include costs of all such transportation.	Responsibility and costs for equipment storage either at site or store are not included in bidder's scope. Please confirm.	Open Storage shall be provided by RSGL, however, bidder shall be responsible for loading from storage, re-transportation & unloading of goods at site and successful commissioning. Vendor also to provide proper packing/coverage of material ensuring safety from environmental / weather impacts.
4	Commercial Volume I of II for Supply of Compressor	165	3.1.2	Balance 10% payment: Progressively on completion of Installation, erection & commissioning of each CNG Online Compressor unit and against submission of invoice and acceptance by owner. However, if, erection is not started within 90 days after supply due to non-availability of site/gas, payment against erection and commissioning shall be released to the successful bidder against receipt of bank guarantee of the said amount to initially remain valid for a period of 1 year after completion of 90 days; ie; 15 months from the date of FOT site (actual) & shall be extended further, if required.	Please replace the word "started " by "completed". It is possible that erection activities begin within 60 days however they may not get completed in case of non availability of gas / incomplete station infrastructure etc. which are reasons solely attributable to purchaser. In this case there would be no backstop for release of payment as the activities are started and they may not be completed for reasons not attributable to bidder.	Tender Conditions shall prevail.
5	Commercial Volume I of II for Supply of Compressor	165	3.1.2	"and shall be extended further, if required;"	We request you to modify as per below; "and shall be extended further, for a period of 12 months"	Tender Conditions shall prevail.
6	Commercial Volume I of II for Supply of Compressor	167	5.1 (i)	Price Reduction will be applicable @ ½ % of the total order/ contract value per week of delay or part thereof in supply/ completion of work subject to a maximum (ceiling) of 5% of total order/ contract value.	Price Reduction will be applicable @ ½ % of the total order/ contract value per week of delay or part thereof in supply/ completion of work subject to a maximum (ceiling) of 5% of undelivered part of total order/ contract value.	Tender Conditions shall prevail.
7	Commercial Volume I of II for Supply of Compressor	167	5.1 (i)	In this supply contract, the portion of supply completed in all respect which can be used for commercial operation shall not be considered for applying PRS, if delivered within contractual delivery period. The remaining supplies which are completed beyond the contractual delivery shall attract price reduction schedule @ ½ % per week of delay or part thereof of the delayed delivery value maximum upto 5% of the total order value	Please modify the clause as follows - "In this supply contract, the portion of supply completed in all respect which can be used for commercial operation shall not be considered for applying PRS, if delivered within contractual delivery period. The remaining supplies which are completed beyond the contractual delivery shall attract price reduction schedule @ ½ % per week of delay or part thereof of the delayed delivery value maximum upto 5% of the undelivered part of total order value"	Tender Conditions shall prevail.
8	Commercial Volume I of II for Supply of Compressor	166	3.1.3	5% payment: Progressively on Testing and completion of Field Performance Test of each Compressor unit, all other works & final acceptance by the owner and submission following additional document	Please note that, there is no backstop for this 5% payment therefore bidder will not receive this payment until compressor is not commissioned. There should be backstop of 60 days from the date of despatch of compressor at site for release of this payment similar to 10% of payment.	Tender Conditions shall prevail.
9	Technical Volume II of II for Supply of Compressor	7	6.6	The Supplier shall deliver a Certificate confirming to EN 10204 3.2 stating the quality, the mechanical properties, the chemical analysis, the process of manufacture and the making of the Compressor.	Please note that material compliance certificate of type 2.1 will be provided for compressor components.	Bidder to submit type 3.2 for crank shaft / connecting rod , 3.1 for fittings/tubes and 2.1 for rest.
10	Technical Volume II of II for Supply of Compressor	8	7.8	Weekly & fortnightly progress reports for all activities including procurement.	Progress report will be provided on monthly basis.	Tender shall prevail because it is a very critical equipment , requires continuous monitoring.
11	Technical Volume II of II for Supply of Compressor	15	3.19	Y- Type strainers/ paper filter, valves, sight flow indicators, check valves, manual drain/ traps etc. as required for various auxiliary systems i.e. frame lube oil, cylinder lubrication system, cooling water systems, Power supply/conditioning system etc.	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. Same comment applicable for all compressor packages.	This requirement is general and applicable for all other auxiliary system. For cylinder lubricator; it shall be as per manufactured standard.
12	Technical Volume II of II for Supply of Compressor	16	3.25	Each stage outlet Temp. Before cooler & after cooler to be displayed on PLC.	Please note we are provided TG at before cooler i.e. Each stage suction temperature and after cooler temperature i.e. Each stage discharge temperature is displayed on PLC.	Confirmed. However, it should be corrected as "TG at before cooler i.e. Each stage discharge temperature and after cooler temperature i.e. Each stage suction temperature is displayed on PLC. "
13	Technical Volume II of II for Supply of Compressor	16	3.31	All gas piping downstream of coalescent filter in compressor discharge shall be of SS 316 only.	Tubing will be used instead of piping, downstream of discharge filter. Same comment applicable for all compressor packages.	Bidder's understanding is correct.
14	Technical Volume II of II for Supply of Compressor	16	3.32	The pressure in each bank should be monitored through priority panel with the help of PLC by providing PT in each bank in priority panel	Monitoring of pressure in each bank is not required. Only compressor discharge pressure needs to be monitored. Please accept. Same comment applicable for all compressor packages.	Tender shall prevail
15	Technical Volume II of II for Supply of Compressor	18	3.4	List of spares with rates for three-year operation & maintenance to be provided by bidder separately. This shall not be considered for BID evaluation.	We will provide list of spare with rates for three year O & M after Award of Contract i.e. During detailed engineering stage.	Tender shall prevail



 ENERGISING QUALITY		REPLIES TO BIDDER'S QUERIES PROJECT : PROCUREMENT OF 650 SCMH ONLINE GAS ENGINE DRIVEN COMPRESSOR				 RAJASTHAN STATE GAS LIMITED राजस्थान राज्य गैस लिमिटेड
Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019						
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
16	Technical Volume II of II for Supply of Compressor	18	3.41	Bidder shall provide separate rates for Lump Sum Comprehensive Annual Operation and maintenance Servicing, charges for CNG Compressor including Air compressor for 1st year after warrantee period inclusive of manpower, spare, consumables etc. Client has right to extend O&M service after warrantee period. This shall not be considered for BID evaluation.	We will provide rates for O & M after Award of Contract i.e. During detailed engineering stage.	Tender shall prevail
17	Technical Volume II of II for Supply of Compressor	20	7.1.2	The piping along with structural supports, copper jumpers for all the flange joints from battery limit to Compressor package shall be in bidder's scope. Piping from air compressor to air receiver and CO2 cylinders up to enclosures at a max. Distance of 30m each is in the scope of bidder and shall be treated as part of supply & erection. All the SS tubing shall be supported properly with PVC clamps only.	CO2 piping will be in carbon steel material. Comment is applicable for all compressors.	Bidder's understanding is correct
18	Technical Volume II of II for Supply of Compressor	22	1.1	Suction / discharge pulsation dampers/Volume bottles	We provide suction volume bottle at inlet of 1st stage only and discharge volume bottle for each stage. This is our standard practice for all CNG compressors. Same comment applicable for all compressor packages.	Refer query at S.No.25
19	Technical Volume II of II for Supply of Compressor	22	1.2	Process equipment such as separator complete with supports, drain system for separators	Volume bottles will act as separator. Additional separators are not provided. Same comment applicable for all compressor packages.	Acceptable.
20	Technical Volume II of II for Supply of Compressor	22	1.21	Flywheels, barring device	Flywheel is not required. Same comment applicable for all compressor packages.	Bidder to check flywheel requirement for speed fluctuation due to intermittent cyclic pressurisation in reciprocating compressor. If required then flywheel to be provided
21	Technical Volume II of II for Supply of Compressor	30	12.12	The rates quoted by the Bidder must be inclusive of all the taxes, duties, services tax, work contract tax and any other levies, Bidder's share of P.F. and insurance charges, Bidder's profit and any other expenditure etc.	As per schedule of rates provided, bidder has to quote basic price and GST separately.	Bidder's Understanding is correct.
22	Technical Volume II of II for Supply of Compressor	30	12.13.1	All spares, consumables, lubricants, lubricating oil, coolant, sealant etc. required for carrying out the Operation and maintenance of the complete compressor package during the warranty period, including periodic, breakdown maintenance for continuous and uninterrupted operation of the compressor packages shall be in scope of the Bidder and shall be kept in stock. If any equipment got fire or broken due to accident the same shall be replaced or rectified by the bidder.	Please note storage and stocking is in customer scope. During storage if any fire or accident takes place, bidder is not responsible for the same.	Comprehensive AMC during warrantee period is the responsibility of the Bidder, therefore, storage of all spares, consumables and other items shall be stocked by the bidder in their stock at their works so that these can be arranged at site during operation and maintenance without any delay.
23	Technical Volume II of II for Supply of Compressor	30	12.13.1	Electricity shall be supplied free of cost to the Bidder.	Please Electrical supply should be healthy.	Confirmed
24	Technical Volume II of II for Supply of Compressor	47	5.8	Air-cooled inter-stage and final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to 52 °C. For calculating the surface area of the air cooler, the ambient air temperature of 47 °C (max.) and 80% RH shall be considered. Cooler design shall be on the basis of 20% excess capacity than required corresponding to suction pr. of 19 kg/cm2(g).	Cooler will be designed with 20% margin on heat duty of design case. Cooler adequacy will be checked for suction pressure of 19 kg/cm2 g. Package discharge temperature specified is 52 degC. If 47 deg C is to be considered as design temperature for air cooler then the discharge temperature considering sufficient margin on differential temperature of air for cooler design shall be 55 deg C. Same comment applicable for all compressor packages.	Bidder's understanding is correct
25	Technical Volume II of II for Supply of Compressor	47	5.90	Carbon Steel separators / KOD/volume bottles with auto drain system shall be provided for the capacity as required	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 valves. These volume bottles shall act as scrubbers / condensate removal system. No separate separators shall be supplied.	Acceptable.
26	Technical Volume II of II for Supply of Compressor	47	v	Suction damper and gas recovery vessel shall preferably not be combined and one pressure regulator with isolation valve shall be provided to connect gas recovery vessel with compressor suction.	Any isolation valve or pressure regulator is not provided between suction damper and gas recovery vessel as it is not a process requirement for variable suction pressure compressor.	This is not applicable as the compressor is not variable suction pressure compressor
27	Technical Volume II of II for Supply of Compressor	48	5.10	Coalescent super fine filters (preferably two stage) with CE mark / Third party certification for removal of liquid (e.g. water & oil) and solid particles down to 0.1 microns out of compressed natural gas shall be provided. Residual Oil Contents shall be less than 1 PPM. Automatic drains with On-off valve connected to Gas recovery vessel shall be provided. The filter should be sized to flow min. 200% of the flow at suction pressure of 19 kg/cm2g. However mechanical design shall be based on safety set pressure.	Please accept residual oil content of 5 PPM as it is a standard requirement for CNG compressor packages. Also we can provide 20% excess flow margin for filter design. Design for 200% flow seems to be excessive. Same comment applicable for all compressor packages.	Bidder's query is acceptable. Refer corrigendum#1 SI No-01
28	Technical Volume II of II for Supply of Compressor	49	5.13	The maximum allowed temperature within the enclosure shall be 5°C above ambient temperature. Adequate ventilation fans/suitable arrangement shall be provided to meet the above and also to account for heat dissipation of the coolers.	A separate ventilation fan is not required as cooler fan is of forced draught type which forces air out of the enclosure. Same comment applicable for all compressor packages.	Acceptable if cooler fan is used to force air from enclosure. If not then ventilation fan is required.
29	Technical Volume II of II for Supply of Compressor	50	5.13	Enclosures shall be weather proof with manufacturer's compliance to degree of protection equivalent to IP 54 as defined in AS 1939, provided with ventilation system.	Compressor package will have weatherproof enclosure. Any IP rating is not applied. Same comment applicable for all compressor packages.	Enclosures shall be weather proof with manufacturer's compliance to degree of protection.
30	Technical Volume II of II for Supply of Compressor	50	5.13	The enclosures shall have doors for normal access and removable wall panels for ease of maintenance.	Enclosure does not have removable panels. However this does not affect the maintainability of the compressor package. Same comment applicable for all compressor packages.	Acceptable
31	Technical Volume II of II for Supply of Compressor	50	5.13	All the pressure, temperature, gas flow meter, oil level, lube oil pressure, coolant temperature, coolant level indicators shall be visible from outside of enclosures.	Oil level indicators are mounted directly on crankcase / lube oil tank as applicable hence they cannot be directly seen from outside of enclosure. Same comment applicable for all compressor packages.	Acceptable
32	Technical Volume II of II for Supply of Compressor	51	5.14	All high-pressure double ferrule fitting & 2/3 way valves shall be from SWAGELOK or PARKER makes & shall be SS 316 material only.	Please approve SSP make as well. Same comment applicable for all compressor packages.	Tender shall prevail



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		Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019						
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies		
33	Technical Volume II of II for Supply of Compressor	51	5.14	Heat exchanger tube material shall be SS 304 / SA 179.	Heat exchanger tube material will be SA 179.	Acceptable		
34	Technical Volume II of II for Supply of Compressor	59	6.6.1 i	Compressor grooved flywheel	Compressor does not have a flywheel. Same comment applicable for all compressor packages.	Bidder to check flywheel requirement for speed fluctuaion due intermittent cyclic pressurisation in reciprocating compressor.		
35	Technical Volume II of II for Supply of Compressor	62	f	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.	Junction box not required as all cables will be connected directly to PLC panel. Same comment applicable for all compressor packages.	Confirmed, All field cable shall be connected directly to Junction Box or all field cables shall be directly connected to PLC panel.		
36	Technical Volume II of II for Supply of Compressor	63	k	Offered mass flowmeter shall be necessary for Custody Transfer application but not exceeding 0.5% of span.	We understand that the flowmeter is not required for custody transfer application.	Bidder's understanding is correct, It is not a custody transfer meter but the meter accuracy shall be 0.5% of span as a standard practice.		
37	Technical Volume II of II for Supply of Compressor	66	f	Inspection testing for Indian bidder: Owner/Consultant shall carry out Inspection and testing as per QAP, inspection charges shall be considered @1.0% of the exworks price excluding duty and taxes of the equipment for price evaluation purpose only. Domestic bidder shall also arrange 3rd party for inspection as indicated in QAP and expenses on third party inspection including fees payable and arranging the same shall be borne by bidder.	As per scope of work mentioned, the charges for TPIA has to be borne by bidder. Thus additional 1.0% price for inspection charges need not be considered for price evaluation. Same comment applicable for all compressor packages.	Refer corrigendum#1 Sl.No-02		
38	Technical Volume II of II for Supply of Compressor	68	9.4	Air/N2 can be used for string test purpose if natural gas is not available in the shop.	String test should only be performed on natural gas. Same comment applicable for all compressor packages.	Acceptable Refer corrigendum#1 Sl.No-03		
39	Technical Volume II of II for Supply of Compressor	70	10.7.3.1 a-ii	If the equipment is down for more than 4 hours on any day or availability is less than 98% in a month. Penalty would be applicable as follows: upto 12 hours : Rs. 20,000/- Beyond 12 hours: Rs. 40,000/- per day. In case of daily availability is 20 hrs. but monthly average availability is below 98%. Then penalty @ of 10,000 per % or part thereof shall be applicable.	Request you to reduce the penalty follows. Up to eight hours: NIL Up to 24 hours: INR 10,000/- Same comment applicable fpr all compressor packages.	Tender shall prevail		
40	Technical Volume II of II for Supply of Compressor	72	13	Bidder shall conduct a field trial run of each compressor package for minimum 72 hours continuous duration at guaranteed points in which satisfactory operation of complete package together with all accessories/auxiliaries controls shall be established for specified operating conditions prior to the start of one year operation and maintenance period as defined in the contract.	72 hours continuous duration is not possible as the working of compressor depends on station load. Intermittent duration for a total duration of 72 hours shall be counted.	Refer reply at S.No-73		
41	Technical Volume II of II for Supply of Compressor	73	f	Along with the supply of each compressor package, the supplier shall provide software for PLC & HMI, ladder logic and software authorization password/license in two sets.	1 set of software will be sufficient for compressors installed under one GA.	Tender Shall Prevail.		
42	Technical Volume II of II for Supply of Compressor	89	8.1.5	ASME CODE STAMP	No code stamp will be provided for pressure vessels.	Refer corrigendum #1 Sl.No.-04		
43	Technical Volume II of II for Supply of Compressor	90	9.9	LEVEL SWITCHES - Suction K.O.D (for automatic drain), Discharge K.O.D (for automatic drain)	Volume bottles have timer based drains. Level switches are not provided. Same comment applicable for all compressor packages.	Acceptable		
44	Technical Volume II of II for Supply of Compressor	90	9.12	DIFF. PRESS SWITCHES	Differential pressure switches are not required and not offered. Same comment applicable for all compressor packages.	Differential pressure switch is required for alarm to control room operator to alert/indications of blockage of filter cartridge for the further necessary action.		
45	Technical Volume II of II for Supply of Compressor	91	12.2	Ultrasonic testing for piston rod, connecting rod	Ultrasonic testing will be carried out for connecting rod only. We have used same philosophy for compressors supplied to various CGD companies in India. Same comment applicable for all compressor packages.	Tender shall prevail		
46	Technical Volume II of II for Supply of Compressor	91	12.4	Dye penetrant testing for cylinder liners , piston	Dye penetrant testing for cylinders liners, piston is not carried out. We have used same philosophy for compressors supplied to various CGD companies in India. Same comment applicable for all compressor packages.	Tender shall prevail		
47	Technical Volume II of II for Supply of Compressor	91	12.10	Leak proof test of crank case	Leak proof test of crank case is not carried out as same is . We have used same philosophy for compressors supplied to various CGD companies in India. Same comment applicable for all compressor packages.	Tender shall prevail		
48	Technical Volume II of II for Supply of Compressor	93	31	Side Frame : C.S. Inside Zinc Protected	Cooler headers will have heat resistant paint instead of zinc coating.	Confirmed		
49	Technical Volume II of II for Supply of Compressor	94	36	Plenum Chamber : CS inside Zinc Protected	Plenum chamber will have heat resistant paint instead of zinc coating.	Confirmed		
50	Technical Volume II of II for Supply of Compressor	99	127	EXHAUST STACK / CHIMNEY	Exhaust stack of 1 meter will be provided.	It should be as per statutory required of CPCB/NGT for Gas Engine stack.		
51	Technical Volume II of II for Supply of Compressor	101	187	TORSIONAL ANALYSIS REPORT ON ENGINE	Order specific torsional analysis is not performed. Coupling design for CNG compressors is standardized.	Bidder to furnish Torsional Analysis report for earlier supplied similar compressor.		



 ENERGISING QUALITY		REPLIES TO BIDDER'S QUERIES PROJECT : PROCUREMENT OF 650 SCMH ONLINE GAS ENGINE DRIVEN COMPRESSOR				 RAJASTHAN STATE GAS LIMITED राजस्थान राज्य गैस लिमिटेड
		Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019				
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
52	Technical Volume II of II for Supply of Compressor	101	190	ANTI VIBRATION PADS	Anti vibration pads are not used for engine mounting. The engine is directly bolted to the baseframe. This is our standard practice for CNG compressor packages.	Tender shall prevail
53	Technical Volume II of II for Supply of Compressor	101	192	SEPERATE ACCOUSTIC ENCLOSURE WITH VENTILATION FAN	A separate acoustic enclosure is not provided. Ventilation fan is not required as the cooler fan is of forced draught type which forces air out of compressor enclosure.	Refer reply over sl.no-28
54	Technical Volume II of II for Supply of Compressor	106	43	Blow Down vessel level - Yes	Blow down vessel does not have level indication as it is used as buffer volume during depressurization and not for liquid storage.	Bidder's understanding is correct
55	Technical Volume II of II for Supply of Compressor	109	24	INLET AIR FILTER DIFFERENTIAL PRESSURE	Differential pressure indication for air filter is not provided.	Tender shall prevail
56	Technical Volume II of II for Supply of Compressor	123	-	MATERIAL TC FOR : CRANK SHAFT, CONNECTING RODS, CYLINDER, PISTON	Material TC will be provided fro review. Witness is not offered for TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	For this provision of Review (R) is also available
57	Technical Volume II of II for Supply of Compressor	123	-	HYDRO TEST OF CYLINDER HEADS	Witness is not offered to TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	Tender shall prevail.
58	Technical Volume II of II for Supply of Compressor	123	-	ULTRASONIC TEST OF - CRANK SHAFT, CONNECTING ROD, PISTON ROD. (REFER NOTE: 1)- (MFR'S COMPLIANCE REPORT/ CERTIFICATE)	Ultrasonic testing will be carried out for connecting rod only. We have used same philosophy for compressors supplied to various CGD companies in India. Same comment applicable for all compressor packages.	Tender shall prevail.
59	Technical Volume II of II for Supply of Compressor	124	-	PRESSURE VESSELS-MATERIAL TEST CERTIFICATES FOR RAW MATERIAL, HYDRO TEST OF PRESSURE VESSELS, FINAL PAINTING AND CLEANING	Witness is not offered to TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	Tender shall prevail.
60	Technical Volume II of II for Supply of Compressor	124	-	HEAT EXCHANGERS (AT SUB-VENDOR WORKS)-DIMENSION AND VISUAL INSPECTION REPORT AS PER DRAWING / DATA SHEET, RADIOGRAPHY OF HEAT EXCHANGERS AS APPLICABLE, HYDRO TEST OF HEAT EXCHANGERS	Witness is not offered to TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	Tender shall prevail.
61	Technical Volume II of II for Supply of Compressor	124	-	DISCHARGE GAS FILTER-FINAL DIMENSIONS/PNEUMATIC TEST	Witness is not offered to TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	Tender shall prevail.
62	Technical Volume II of II for Supply of Compressor	125	-	COMPRESSOR PACKAGE-SURFACE PREPARATION AFTER CLEANING & PRIOR TO PRIMER PAINTING, DIMENSIONS / VISUAL AS PER DRAWING	Witness is not offered to TPIA as the components will be used from inventory as we manufacture these compressors on contineous basis.	Tender shall prevail.
63	Technical Volume II of II for Supply of Compressor	176	-	COMPLIANCE STATEMENT-List of recommended spares and accessories for two year normal operation for procured item.	Shall be provided after award of contract.	Tender shall prevail.
64	Guarantee	166 of 179	6	The materials/goods supplied within the scope of this contract shall be guaranteed for a period of twelve (12) months from the date of commissioning or twenty four (24) months from the date of delivery at RSGL's store / site; whichever is earlier	We request that the materials/goods supplied within the scope of the contract shall be warranted for a period of twelve (12) months from the date of commissioning or eighteen (18) months from the date of delivery at RSGL's store / site; whichever is earlier. Please confirm	Tender shall prevail.
65	Scope of Supply	3 of 24	3	Lubricated or non-lubricated two throw balanced opposed reciprocating compressor with lube oil system and cooling system (console type) as required.	Burckhardt Compressor packages have been duly approved for use in City Gas Distribution Industry by established PMCs such as Mecon Ltd, EIL, Tractebel, VCS Quality Care, Resonance Energy & JP Kenny. We request approval of Burkhardt Compression make Trunk Piston Design which is field proven with CGD companies i.e. IGL, AGL, Gujarat Gas, TNGCL etc. Burckhardt Trunk Piston Design compressors have clocked over 2.5 million cumulative operating hours for CNG application in India. Kindly approve Trunk Piston design in addition to balanced opposed design.	Refer Corrigendum#1 Sl.No - 05 & 06



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Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
66	Scope of Supply	3 of 24	3.14	8-line Priority Panel at Package Discharge as per Priority fill system.	As per scope of supply and services (page no. 4 of 9 of Technical volume), 6 Line priority Panel is asked whereas page no. 3 of 24, Technical volume states for 8-line Priority Panel at Package Discharge as per Priority fill system. Please confirm the required lines.	We have facility at station 1 stationary cascade (3 Banks) & 1 Car dispenser (3 Banks). So, there will be 6-line priority panel.
67	Scope of Supply	5 of 24	3.22	Single Acoustic enclosure for both Compressor and gas engine as specified, with two number L.E.L detectors and two UV/IR detectors in enclosure.	We understand PESO is recommending double chamber/ single chamber with heat shield between compressor & gas engine. However, in our opinion double chamber design is safer. Please allow us to deliver either of above two.	Acceptable, However the bidder has to provide detectors GD & FD in both the chambers
68	Utilities	8 of 24	7.1.1	Air compressor of capacity approx 7.5 KW preferably of IR/KPCL/Elgi/CP make of discharge pressure approx. 16 kg/cm2(g) with 1000 water litre capacity air receiver with PRV, air dryer along with all accessories and auxiliaries shall be supplied	Please approve Anest Iwata Motherson make air compressor also. It is one of the reputed Japanese make and actively used on CNG sites Kindly approve.	Tender condition shall prevail
69	Battery Limits	9 of 24	7.1.2	Gas Inlet shall be brought out to a distance of approx. 10m from the package edge and terminated in nozzles with isolation valves having flange connection to connect CNG duplex filter	We understand that Duplex filter with interconnecting piping from duplex filter to compressor package (battery limit) shall be max 10m (approx.)	Bidder's understanding is correct
70	Scope of Services	21 of 24	12.13.2	All parts replaced by the Bidder during the above contract period shall be properly packed and handed over to Purchaser, on replacement.	We shall handover all parts except parts to be returned to respective OE suppliers for warranty replacement / repair.	Confirmed
71	Guaranteed Parameters - Notes	24 of 24	13. Notes a)	Bidder shall indicate the specific fuel consumption kg/hr/Kw and the fuel consumption (above defined compressor capacity) in SCMH as guaranteed value in the offer on the design case gas composition. The guaranteed value of fuel consumption of gas engine in SCMH shall be between 23 and 25 SCMH corresponding to flow of 650 SCMH for the given gas. Bidder shall not be given any credit/advantage for quoting fuel consumption below the lower limit. But in case the fuel consumption quoted by the bidder exceeds the upper limit, the bid will be rejected. Therefore, bidders are requested to indicate the fuel consumption very carefully. Fuel consumption of all the techno-commercially qualified Bidders shall be compared with respect to the lowest SCMH quoted by any Bidder within the range 23 to 25 SCMH. Even if any bidder quotes less than 23 SCMH as fuel consumption by engine for running the package, 23 SCMH will be considered as fuel consumption by packager for price loading purpose. All other bidders shall be loaded as per differential cost evaluated as per formula mentioned in technical specification over and above the total evaluated price.	We request that loading shall be calculated on the basis of actual guaranteed fuel consumption by the bidder i.e. if any bidder quotes fuel consumption below 23 SCMH, that value shall be considered for price loading purpose of other bidders.	Refer corrigendum #1 Sl.No - 07
72	Cooling System	12 of 38	5.8	Air-cooled inter-stage and final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to 52 Deg C. For calculating the surface area of the air cooler the ambient air temperature of 47 Deg C (Max) and 80% RH shall be considered....	As per clause no. 5.13 of page no. 14 of 38, the maximum allowed temperature within the enclosure shall be 5°C above ambient temperature. Gas suction temperature & Discharge Temperature can't be the same within the enclosure. Accordingly, we request to allow gas temperature after the after cooler as Ambient+10 Deg C. Kindly approve.	Refer reply over sl.no-24

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Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
73	Mechanical String Test and Package Performance Test	32 of 38	9.2	<p>9.4 Mechanical String Test Mechanical String Test for 4 hrs shall be performed at packager's shop before dispatch in presence of Purchaser/Consultant. This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver, lube Oil system is used for the test. Air/N2 can be used for string test purpose if natural gas is not available in the shop. All parameters including discharge pressure shall be demonstrated. All the interlocking and performance of the instrumentation system will be verified during the MST. String test at unload condition is not acceptable.</p> <p>9.5 Package Performance Test Bidder shall send fully assembled package including auxiliary systems, instrumentation, safety devices within the enclosure to the site and carry out the performance test at site before the commencement of 72 Hours Field Trial Run. Complete package shall be performance tested as a module whereby along with electric motor / gas engine & compressor performance bidder shall demonstrate all controls, shutdown, trips/alarms etc. The test shall be the basis of assigning penalties on the bidder, acceptance/rejection of the package thereon. Bidder shall submit the detail test procedure for the same, which shall be approved by Client. The test for the package shall be witnessed by Client representatives.</p>	<p>We hereby submit that at site Intermittent loads, fluctuations in suction pressure & other input conditions and frequent auto shutoff cause variations in performance parameters and do not truly represent the actual performance capability of package.</p>	Refer Corrigendum#1 Sl.No.-08
74	Loading & Penalty Criteria	203-204 of 312	10.7	<p>10.7.1 Loading Bidder shall indicate the specific fuel consumption kg/hr/BKW and the total fuel consumption (above defined compressor capacity) in kg/hr as guaranteed value in the offer. The offers shall be loaded for the fuel consumption as given under The loading per package shall be the differential cost evaluated as follows; Total cost of the package for evaluation purpose (A+B+C) Where A: Capital cost of each package including cost of erection, commissioning, and special tools and commissioning spares B: Cost of Mandatory spares (Each Package) C: Differential operating cost as defined hereunder Differential operating cost (C) C (in Rs) = Nop x (Fe - Fr) x Cf X Df Where Nop : 8000 Hrs Fe : Guaranteed fuel consumption in SCM/Hr for bidder under evaluation Fr : Lowest Guaranteed fuel consumption SCM/Hr (amongst technical accepted bidder) Cf : Cost of fuel as Rs 32 / SCM Df : discounting factor to arrive at Net Present Value (NPV) based on 5 years i.e. 3.274 Maximum loading shall be limited to 10% of the total quoted cost i.e. A+B as defined above and shall be applicable for all the packages ordered.</p> <p>10.7.2 Penalty In case during shop performance test of compressor package the fuel consumed in terms of SCM/hr, to achieve the guaranteed compressor capacity of 650 SCM/Hr is found more than 10% the entire package shall stand rejected. However, for every extra SCM/hr consumed over and above the guaranteed value upto a maximum of ten percent the Bidder shall be penalized for extra fuel consumption. The penalty per package shall be the differential cost calculated as follows: PY = Penalty Cost FT = Fuel consumption as obtained from field test in terms of SCM/hr FG = Guaranteed fuel consumption in SCM/hr CF = Rs. 32 /SCM DF = 3.274 (Discounting factor based on 5 years of operating years) The total penalty to be charged for non-conformance of guaranteed parameter shall not exceed 10% of the ordered value i.e. A+B as defined above. No advantage shall be given for higher performance than the guaranteed.</p>	<p>In our opinion, in order to encourage fuel efficient machines, loading & penalties on excess fuel consumption shall be calculated on total lifecycle of the machine i.e. approx. 73000 Hrs. Further, capping of 10% of package cost should also be removed. We request you to kindly look into the same and amend accordingly.</p>	Refer Corrigendum#1 Sl. No- 09
75	Gas Engine Data Sheet	2 of 7 of Data Sheets	27	Exhaust Gas Emission: Statutory requirements as per Central Pollution Control Board	Gas engines for CNG compressor applications are not covered under CPCB rules. Please confirm acceptance.	CPCB Emission norm for Gas generator set to be considered

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Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
76	Technical Volume II of II for Supply of Compressor	40	2.2	Driver belt if used shall be of anti-static and fire resistant type.	Not Applicable	Acceptable
77	Technical Volume II of II for Supply of Compressor	45	5.3	The surface hardness of Rockwell C 50 minimum is required on piston rods in the areas that pass through the packing.	Piston rod will be nitrided in the areas that pass through the packing and surface hardness of 50 / 55 HRC.	Acceptable
78	Technical Volume II of II for Supply of Compressor	45	5.4	Packing vent piping inside of the distance piece shall be designed for the maximum allowable working pressure of the cylinder.	Not Applicable	Acceptable
79	Technical Volume II of II for Supply of Compressor	46	5.5	Heating shall be provided for reservoir when the minimum ambient temperature is less than the Bidder's required minimum start up temperature.	Not applicable	Acceptable
80	Technical Volume II of II for Supply of Compressor	46	5.6	Distance Pieces Compressor manufacturer's standard Type-1 or Type-2 of API 11 P shall be provided as a minimum.	Distance piece will be as per ACIL standard. Venting is not applicable due to pressurised crankcase.	Acceptable
81	Technical Volume II of II for Supply of Compressor	46	5.7	Single plunger per point force feed mechanical lubricator or divider block system shall provide lubrication to compressor cylinders. Lubricators shall be driven by crankshaft and bidder shall highlight any pre lubrication requirements of the cylinders and the method of achieving the same.	Common indicator is provided & Brass NRV provided.	Tender shall prevail
82	Technical Volume II of II for Supply of Compressor	46	5.7	Lubricators shall have a pin flow indicator for each lubricator point and a stainless steel double ball check valve shall be provided at each lubrication point.	Common indicator is provided & Brass NRV provided.	Tender shall prevail
83	Technical Volume II of II for Supply of Compressor	46	5.7	Lubricator reservoir capacity shall be adequate for 50 Hrs. of normal operation, and shall be equipped with low-level alarm.	Lubricator reservoir capacity is 36 litre for 150hrs of normal operation.	Acceptable
84	Technical Volume II of II for Supply of Compressor	46	5.8	Inter / After Gas Coolers Air-cooled inter-stage and final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to 52 °C. For calculating the surface area of the air cooler, the ambient air temperature of 47 °C (max.) and 80% RH shall be considered. Cooler design shall be on the basis of 20% excess capacity than required corresponding to suction pr. of 19 kg/cm2(g). Gas sections of coolers shall be designed as per API-661 requirements. Vibration switch shall be provided on the heat exchanger to trip the compressor on high vibration limit. Bidder shall indicate vibration level in the offer. For cooling of the Heat Exchangers a cooling fan 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.	- The approach above ambient would be 10°C. (max. discharge temp. 42°C + 10°C = 52°C). - The required inputs would be given in the Heat Exchanger datasheet.	Refer query reply at S.no 24
85	Technical Volume II of II for Supply of Compressor	16	1.6 XXXii & 3.13.11 3.13.8	All piping after coalescent filter at compressor discharge shall be of SS 316. Pressurized lubricating oil lines downstream of the filter (except for cast-in- frame lines or passages) shall be made of austenitic stainless steel.	After oil filter inbuilt oil galleries are provided, & ACI standard Brass NRV provided at forced lubrication point.	Tender shall prevail
86	Technical Volume II of II for Supply of Compressor	15	3.7	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	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.	Acceptable
87	Technical Volume II of II for Supply of Compressor	15	3.11	Inlet twin suction gas filter of filtration level up to 5 microns with oil drain valve & DP gauge and suction line conical strainer at 1st stage and at other stage if required.	Ok, at suction line y-strainer will be provided for ease of maintenance. Kindly accept.	Tender shall prevail. Vendor to provide twin basket type gas filter of degree of filtration upto 5 micron
88	Technical Volume II of II for Supply of Compressor	15	3.13	Separator/ Knockout drums/volume bottles with solenoid valve operated auto drains as required. Bypass valves for automatic drain system shall be as per manufacturer's recommendation.	Ok, we shall provide automatic drain as per clause, but for oil recovery manual drain valves will be provided as per standard practice.	Tender shall prevail. However the scheme will be discussed during detail engineering.
89	Technical Volume II of II for Supply of Compressor	15	3.14	8-line Priority Panel at Package Discharge as per Priority fill system.	Clause mentions 8-line priority panel, whereas pg6, Item description mentions 6-line priority panel. Kindly confirm exact number of lines on priority panel.	Refer query reply at S.no-66
90	Technical Volume II of II for Supply of Compressor	16	3.25	Each stage outlet Temp. Before cooler & after cooler to be displayed on PLC.	Each stage outlet temperature before cooler will be displayed on PLC, after cooler not considered. This is as per our standard package design. Kindly accept	Tender shall prevail
91	Technical Volume II of II for Supply of Compressor	16	3.27	CCOE/BIS approvals of cylinders used in CO2 flooding system to be submitted.	Certificate as applicable and available will be submitted,	Acceptable
92	Technical Volume II of II for Supply of Compressor	16	3.28	Gas flow directions to be marked "Gas In/ Gas out "with cylinder stage No. on all the inlet outlet of gas piping inside compressor package.	Instead gas flow will be marked, this is as per our standard practice.	Acceptable
93	Technical Volume II of II for Supply of Compressor	43	4.0	EQUIPMENT QUALIFICATION CRITERIA: Gas Engine	We shall considered Cummins GTA 855 gas engine. We have previously supplied these successfully.	Acceptable. However, adequacy of Cummins GTA 855 gas engine will be checked during detail engineering

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		Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019				
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
94	Technical Volume II of II for Supply of Compressor	47	5.8	Air-cooled inter-stage and final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to 52 °C. For calculating the surface area of the air cooler, the ambient air temperature of 47 °C (max.) and 80% RH shall be considered. Cooler design shall be on the basis of 20% excess capacity than required corresponding to suction pr. of 19 kg/cm2(g). Gas sections of coolers shall be designed as per API-661 requirements. Vibration switch shall be provided on the heat exchanger to trip the compressor on high vibration limit. Bidder shall indicate vibration level in the offer. For cooling of the Heat Exchangers a cooling fan 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.	The coolers will be designed based on ASME standards as per our standard practise, the approach will be gas temp after cooler to be ambient +10 Deg C. As per our experience design based on 10% excess capacity than requird is sufficient for the application. Cooler datasheet will be provided along with the Technical Offer.	Tender shall prevail and also refer reply at S.no-24.
95	Technical Volume II of II for Supply of Compressor	47	5.9.vi.	If suction damper and gas recovery vessel are combined, pressure regulator after gas recovery vessel will not be allowed due to high pressure drop during compressor operation.	As per standard design practise suction damper and gas recovery vessel are combined, yes we shall not consider pressure regulator after gas recovery vessel.	Acceptable
96	Technical Volume II of II for Supply of Compressor	48	5.9. vii.	Oil from all drains shall be collected into the oil recovery pot. Oil recovery pot shall be provided with manual drain arrangement. Capacity shall be min. 15 water liter.	We shall provide oil recovery vessel (oil drain pot) of 20 liters to ensure uninterrupted operation of machine. ORV shall be mounted inside the package.	Acceptable
97	Technical Volume II of II for Supply of Compressor	48	5.10	Pulsation, Vibration Control and Analog Study	Standard Engg, inherent design point. Not feasible to submit any document against this.	Bidder to submit the document for reference for previous supplied items
98	Technical Volume II of II for Supply of Compressor	49	5.13	The maximum allowed temperature within the enclosure shall be 5°C above ambient temperature. Adequate ventilation fans/suitable arrangement shall be provided to meet the above and also to account for heat dissipation of the coolers.	The maximum temp within enclosure shall be ambient +8°C, this is as per our previous experience and standard design which is applicable to Engine Driven packages accepted previously.	Tender shall prevail
99	Technical Volume II of II for Supply of Compressor	49	5.13	The compressor package shall consist of single enclosure for Compressor and gas engine. The equipment shall be mounted on one common skid. The Enclosure to restrict maximum noise level to 70 dB (A) at 1 meter from the enclosure.	Our standard offered design is for enclosure to restrict maximum noise level to 80 dB+/-3 (A) at 1 meter from the enclosure in free field condition. Kindly accept.	Acceptable
100	Technical Volume II of II for Supply of Compressor	50	5.13	The enclosures shall have doors for normal access and removable wall panels for ease of maintenance. The acoustic material should be fire resistant with fire retardant rating of 30 min. the material used should be UL approved or IS 8183. Necessary documents to be submitted for the material selected.	The enclosure will be filled with Rockwoolfire retardant	Acceptable
101	Technical Volume II of II for Supply of Compressor	50	5.13	All the pressure, temperature, gas flow meter, oil level, lube oil pressure, coolant temperature, coolant level indicators shall be visible from outside of enclosures.	All the indicators are visible from outside on the gauge panel, also display on PLC is provided if in case the gauge is not visible which is a rare case.	Acceptable, However same will be discussed post order
102	Technical Volume II of II for Supply of Compressor	50	5.13	Suitable gradients shall be provided on the enclosure roof for rain drainage and to avoid water pockets.	The Blow down Vessel is placed inside the enclosure owing to the standard design, hence the gradients are not considered. However sufficient design provision shall be such that rain water will be drained off.	Acceptable
103	Technical Volume II of II for Supply of Compressor	51	5.14	Piping	Gas piping/ tubing at 3rd stage diacharge 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 which is followed for previous supplied packages.	Acceptable
104	Technical Volume II of II for Supply of Compressor	51	5.14	Bidder shall furnish a temporary start up conical strainer fitted with adequate size mesh at the gas inlet before the filter.	We shall provide Y-type strainer for ease of maintenance.	Tender shall prevail
105	Technical Volume II of II for Supply of Compressor	51	5.14	External drain & vent piping shall be Carbon Steel and not less than 1" nominal size.	Ok but package oil drain will be of 1/2" as per manufacturer standard.	Acceptable
106	Technical Volume II of II for Supply of Compressor	51	5.14	All gas piping after coalescent filter at compressor discharge shall be of SS 316 of Tubacex and Ratnamani make and hardness less than Rb 80.	Kindly approve Sandvik make along with the two makes mentioned.	Acceptable
107	Technical Volume II of II for Supply of Compressor	53	6.1.1.10	The points to be monitored for downstream of priority panel shall be: i. Pressures in each bank of stationary storage cascades. ii. Pressure at outlet for dispenser. iii. Pressure at outlet for mobile cascades. iv. Control Air Pressure v. Indicators, Alarms and Trips as per Equipment Data Sheets vi. Pre alarm to be incorporated in the software before machine trips in predefined values of Pressure & temperatures	We offer pressure measurements at the banks and dispenser, will be as per the instrument schedule and P&ID submitted for the approval.	Tender shall prevail
108	Technical Volume II of II for Supply of Compressor	62	7.0.b	All package mounted transmitters/transducers & temperature element shall be intrinsically safe " ia" as per IEC 79-11 and solenoid valves, switches and related junction boxes shall be certified flame proof (Exd) as per IEC 79-1 by a statutory body viz. FM, BASEEFA etc. for the specified hazardous area classification. Other special equipment's/instruments, where intrinsic safety is not feasible or available the same shall be flame proof (Exd) certified suitable for the specified hazardous area by a statutory body as per IEC 70-1. All analog as well as digital input to PLC shall be connected through barriers. All analog barrier shall be isolator type.	CCOE or equivalent certificate as applicable will be provided.	Acceptable

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Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
109	Technical Volume II of II for Supply of Compressor	62	7.0.d	Instrumentation electronics shall be certified by a recognized authority such as BASEEFA, PTB, LCIE, CESI, INIEX, and SMRS or any agency approved by Indian Government.	CCOE or equivalent certificate as applicable will be provided.	Acceptable
110	Technical Volume II of II for Supply of Compressor	62	7.0.g	All pressure gauges and pressure transmitters shall be provided with block & bleed valves and have accuracy of + or - 1% of Full Scale Deflection (FSD).	For pressure gauges and transmitters brass type NRV shall be provided.	Tender shall prevail
111	Technical Volume II of II for Supply of Compressor	64	7.0.r	Vendor shall submit the following test certificates and test reports for purchaser's review:- a) Material test certificate with detailed chemical analysis from foundry (MIL Certificate). b) Certificate of radiography / x-ray for any welded joint. c) Hydrostatic test report with pressure of 1.5 times the design pressure. d) Calibration report including calibration factors for each Mass flow meter certificate from statutory body for offered sensor and transmitter for required area classification.	Certificate as applicable and available will be submitted.	Tender shall prevail
112	Technical Volume II of II for Supply of Compressor	64	7.2	Vendor shall provide special tools such as (compression gauge, manometer, oxygen analyzer, Timing light, Flywheel turning tool).	If applicable or required for standard design then shall be evaluated during detail engineering else will not be considered as a standard package design components.	Acceptable.
113	Technical Volume II of II for Supply of Compressor	64	7.5.1	DPRV should be of Fisher make only.	Kindly approve Nirmal make along with the same.	Tender shall prevail
114	Technical Volume II of II for Supply of Compressor	65	7.6	CERTIFICATION:	CCOE / BIS or equivalent certificate as applicable will be provided.	Acceptable.
115	Technical Volume II of II for Supply of Compressor	71	11.2	PAINTING (PRIMER & FINISH COAT)	This shall be as per the Std ACIL procedure	Tender shall prevail
116	Technical Volume II of II for Supply of Compressor	72	11.2	Packing shall be sufficiently robust to withstand rough handling during ocean shipment & in-land journey. Sling points shall be clearly indicated on crates.	Canopy itself is weather proof, separate packing not considered, this as per standard practice.	Tender shall prevail
117	Technical Volume II of II for Supply of Compressor	83	TECHNICAL SPECIFICATION OF INSTRUMENTATION FOR GAS ENGINE DRIVEN CNG COMPRESSOR	5.2 All local temperature gauges shall have minimum 100 mm dial size. The bulb size shall be selected to suit the thermowell.	The dial size would be 63mm as standard package offering, this is applicable for all gauges kindly accept.	Tender shall prevail
118	Technical Volume II of II for Supply of Compressor	84	TECHNICAL SPECIFICATION OF INSTRUMENTATION FOR GAS ENGINE DRIVEN CNG COMPRESSOR	6.1.b.&h Pressure gauges shall be weatherproof with dial size of min 100 mm and shall have features like screwed bezels, externally adjustable zero, over range protection and blowout discs. Pressure gauge sensing element shall be SS 316 and movement of SS 304, as a minimum.	The dial size would be 63mm as standard package offering, this is applicable for all gauges kindly accept.	Tender shall prevail
119	Technical Volume II of II for Supply of Compressor	103	LIST OF INSTRUMENTATION & CONTROLS	01. LIST OF INSTRUMENTATION & CONTROLS	<p>All the instruments will be as per the P&ID submitted for approval along with Instrument Schedule Following not considered :</p> <p>2. Main L/O Pump Disch. Pr (supply header):. NA, DPI is considered.</p> <p>12. Lubricator Failure: NA, Digital No Flow switch considered</p> <p>21. Sight Flow CW return each cylinder, Cooler & Header: NA</p> <p>23. Coolant main pump disch. Pr: NA</p> <p>28. Coolant cooler Outlet Temp.: NA</p> <p>29. Coolant reservoir Level: NA</p> <p>37. Each stage Outlet Pressure: Pressure after cooler considered</p> <p>43. Blow Down vessel level: Not considered</p> <p>48. Blow Down vessel: Field mount pressure gauge will be given.</p> <p>52. motor winding temperature : pt-100: NA</p>	<p>2. Main L/O Pump Disch. Pr (supply header), PG & PT shall be provided,</p> <p>12. Lubricator Failure: Flow switch shall be consider/provided,</p> <p>21, 23, 28 & 29. Acceptable, Provided there is no close cooling circuit used for cyl. cooling as well as gas cooling.</p> <p>37. PG & PT shall be provided at O/L of each stage, before cooler. Final stage O/L Pressure "very high" shall be trip interlock of Compressor,</p> <p>43. Accepted,</p> <p>48. O.K. Accepted,</p> <p>49. Acceptable</p>

<div>  <div> REPLIES TO BIDDER'S QUERIES PROJECT : PROCUREMENT OF 650 SCMH ONLINE GAS ENGINE DRIVEN COMPRESSOR Tender No.: RSGL/KOTA/C&P/2019-20/01 Dated: 16.09.2019 </div> </div>						<div>  <div> RAJASTHAN STATE GAS LIMITED राजस्थान राज्य गैस लिमिटेड </div> </div>
Sr. No.	Document name	PDF Page No.	Clause No.	Requirements as per specification	Bidder query	VCS/RSGL Replies
120	Technical Volume II of II for Supply of Compressor	108	LIST OF INSTRUMENTATION & CONTROLS	1.2 LIST OF INSTRUMENTATION & CONTROLS FOR GAS ENGINE:-	Following not considered : OIL COOLER OIL OUTLET TEMP.-Transmitter and gauge not considered. Differential pressure gauge for fuel and air mixture- Engine suction gas pressure gauge and transmitter only shall be provided. ENGINE JACKET C.W SUPPLY TEMP.- ENGINE JACKET C.W OUTLET temperature gauge and transmitter shall be provided COOLANT MAIN PUMP DISCH. PR. - Not applicable. COOLANT SUPPLY HEADER PR.- Not applicable. COOLANT COOLER OUTLET TEMP - Not applicable. COOLANT RESERVOIR LEVEL- Not applicable. AIR RECIEVER PRESSURE- Engine air starting pressure gauge and tranmitter shall be considered. INLET AIR FILTER DIFFERENTIAL PRESSURE- Shall be same as engine air starting	1. OIL COOLER OIL OUTLET TEMP.-Temperature gauge to be provided at I/L & O/L of OIL COOLER, 2.Acceptable 3.Acceptable, 4,5,6 & 7 Acceptable, Provided there is no close cooling circuit used for cyl. cooling as well as gas cooling. 8.Pressure gauge shall also to be provided/consider in AIR RECEIVER as per tender requirement, 9.Acceptable
121	Technical Volume II of II for Supply of Compressor	123	QUALITY ASSURANCE PLAN	QUALITY ASSURANCE PLAN – GAS ENGINE DRIVEN CNG COMPRESSOR	This shall be as per QAP document submitted for approval :	
122	Technical Volume II of II for Supply of Compressor	123	QUALITY ASSURANCE PLAN	HYDROTEST OF - PRESS.VESSELS	Inspection by owner/TPI not considered	Tender shall prevail
123	Technical Volume II of II for Supply of Compressor	123	QUALITY ASSURANCE PLAN	QAP: Engine	1. Manufacturers' compliance report-Ok Following points are applicable not applicable for engine, we shall consider below points for pressure vessels used in compressor package as per past tender. Please approve. 2. Dimension and Visual Inspection Report as per drawing-Not considered for engine, shall be provided for vessels used in compressor package 3.Material test certificates for RAW Material (Pressure Parts)-Not considered for engine, shall be provided for vessels used in compressor package 4.Radiography of pressure vessels at applicable-Not considered for engine, shall be provided for vessels used in compressor package 5. Hydro test of pressure vessels-Not considered for engine, shall be provided for vessels used in compressor package 6. Final painting and cleaning-Not considered for engine, shall be provided for vessels used in compressor package	To be discussed during detail engineering
124	Technical Volume II of II for Supply of Compressor			Heat Exchangers (at sub-vendor works) WPS / PQR – Welder Qualification	Welding is not applicable.	Tender shall Prevail
125	Technical Volume II of II for Supply of Compressor			Control Panel	Functional test during the PAT	Acceptable
126	Technical Volume II of II for Supply of Compressor	144	LIST OF MATERIALS OF APPROVED BRAND AND/ OR MANUFACTURE	LIST OF MATERIALS OF APPROVED BRAND AND/ OR MANUFACTURE	Kindly approve following makes in addition to list of approved makes: 1. Mass flow meter (coriolis): Endress Hauser/ Emerson 2. Control Panel Box: Sudhir / Flexpro / FCG / FEPL 3. GAS DETECTION SYSTEM & FLAME DETECTION SYSTEM : ESP Safety 4. TANKS & VESSELS: CP approved 5. Vibration witch: Murphy 6. PLC: Siemens, Schneider 7. Suction filter: Beko / Nirmal / Filtration Technik / Ultra filter. 8. Discharge filter: ACIL / Beko / Ultrafilter / Walker 9. Fittings: Parker / Swagelok/ Seal excel 10. Actuators: Air Torque / Elomatic / Parker	To be discussed post order