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No. SunPetro/Bhaskar/CTM/2025-26/237/Bulletin-4

Date: 12.11.2025

BULLETIN #4

Sub: Custody Transfer Meter including all accessories for Bhaskar-I field.

Ref: TD No.: SunPetro/Bhaskar/CTM/2025-26/237

Sun Petrochemicals Private Limited (SunPetro), hereby authorized following amendment / clarification in the above referred RFQ/ Inquiry:

Sr. No	Clause No.	Page No	Original Clause	Bidders Query	SunPetro Response
1	2	Page 26 of 103	This Scope of Work (SOW) specifies the minimum requirements for Design, Engineering, Supply, Installation, Testing & Commissioning of Custody Transfer Metering (CTM) Skid for Crude Oil and Sales gas including all accessories.	Regarding installation, Our understanding is that supervision of site installation is with in bidder scope. All site related activities and will be manage by purchaser. Please confirm.	Site-related activities—including erection, installation, cable laying limited upto flow computer, glanding, termination, tray and junction box installation is in the Scope of Vendor including Civil, structural, piping works. Civil work, site installation, and hook-up with the existing system are in Scope of Vendor and shall quote as a Lump Sum Scope for these subject works as an option.
2	3	Page 47 of 103	Delivery & completion Period: 8 months from the date of PO/LOA/Contract or Bidder to quote their best delivery/ completion period.	It seems some components have long lead times and are imported from outside India. Hence, Bidder request a minimum of 11 months for delivery.	The bidder may quote the best delivery time period.

3	2	Page 26 of 103	Design pressure is missing also piping class is not specified.	Pressure rating is missing. Based on the operating temperature and pressure for crude oil, Bidder are considering 300# pressure class. Please confirm if this is acceptable for crude oil application.	Class 600; Design pressure 75 bar
4	2	Page 26 of 103	Maximum flowrate - 400m3/hr	Please advise if a minimum flow rate is available.	Minimum flowrate -40m3/hr
5	2	Page 26 of 103	The allowable permanent pressure drops across the custody transfer meter shall not exceed 0.5 barg under rated operating conditions.	Our understanding is that the 0.5 barg pressure drop is across the meter only, not the entire metering skid (including piping, header, meter, strainer, compact prover, control valve, and isolation valve). And for entire skid pressure drop should be <1.5 barg. Please confirm	The desired pressure drop across all components of metering is 0.5 barg. However bidder may quote their best offer as per best engineering practice and Codes/Standards.
6	2	Page 26 of 103	Requirement of Strainer for crude oil application	Bidder have not received any P&ID. Since this is a crude oil application, a strainer is required. Please confirm if this is within the bidder's scope.	Basket type strainer and Gas/Air eliminator is in the Bidder's scope. PFD attached as Annexure-1
7	2	Page 26 of 103	Requirement of Control Valve for prover arrangement	It seems there is a requirement for a Ball/Compact prover, which necessitates a control valve. Bidder will propose our design in the technical proposal; please review and confirm.	Bidder may provide their standard/ proven design.
8	2	Page 26 of 103	Design temperature and pressure is missing.	Please provide the same.	Design Temperature- Min - 5 deg C Max - 60 deg. C Design Pressure - 75 bar
9	2	Page 26 of 103	Piping class/ Thicknesses are missing	Please provide the piping specification to determine pipe thickness.	Piping Class 600.
10	2	Page 26 of 103	Valve datasheet, Instrument datasheet, Analyzer such as BS&W, Auto sampling system, etc.	Bidder have not received datasheets for buyout items. Please provide them, or confirm if Bidder should propose our standard offering.	Bidder may propose their Standard and proven specifications/ offerings
11	2	Page 27 of 103	Auto Sampling System in line with API MPMS compliance.	Our understanding is that a pump-based fast loop auto-sampling system is required. Please confirm.	Tender condition to be followed.

12	2	Page 27 of 103	Velocity across pipeline shall be less than 3 m/sec include piping, valve, strainer and filter.	Velocity up to 5 m/s is acceptable in crude oil applications. Please allow maintaining velocity in the skid piping and ball prover up to 5 m/s, as recommended by API standards. Please confirm	Vendor to provide best solution compliant with requirement of min/nor/max flow and pressure drop. Ball prover is not required.																																							
13	2	Page 27 of 103	Supply of densitometer and BS&W measuring instrument	Please provide the datasheet if available.	Deleted. Addendum follows.																																							
14	2	Page 27 of 103	Sales Gas Custody Transfer Metering:	Please provide the following missing process data: 1. Design pressure and temperature 2. Minimum flow rate (if any) 3. Min Pressure	Maximum Operating Pressure is 95 barg; Piping Class shall be 600. Bidder may accordingly finalise design pressure. Design temperature - 65 deg C Minimum flow rate for design - 10,000 SCMD Minimum Pressure - 60 barg																																							
15	2	Page 27 of 103	Gas Composition	The provided gas composition is not readable. Please provide a clear copy.	<table><tr><th>S. No.</th><th>Component</th><th>Composition Range (% v/v)</th></tr><tr><td>1</td><td>Methane</td><td>80.05434</td></tr><tr><td>2</td><td>Ethane</td><td>4.92953</td></tr><tr><td>3</td><td>Propane</td><td>8.43385</td></tr><tr><td>4</td><td>i-Butane</td><td>2.08526</td></tr><tr><td>5</td><td>n-Butane</td><td>0.97598</td></tr><tr><td>6</td><td>i-Pentane</td><td>0.09697</td></tr><tr><td>7</td><td>n-Pentane</td><td>0.06611</td></tr><tr><td>8</td><td>Hexane+</td><td>0.00797</td></tr><tr><td>9</td><td>Nitrogen</td><td>0.40757</td></tr><tr><td>10</td><td>Carbon Di-Oxide</td><td>2.93562</td></tr><tr><td>11</td><td>Water</td><td>0.0</td></tr><tr><td colspan="2">Total</td><td>100</td></tr></table>	S. No.	Component	Composition Range (% v/v)	1	Methane	80.05434	2	Ethane	4.92953	3	Propane	8.43385	4	i-Butane	2.08526	5	n-Butane	0.97598	6	i-Pentane	0.09697	7	n-Pentane	0.06611	8	Hexane+	0.00797	9	Nitrogen	0.40757	10	Carbon Di-Oxide	2.93562	11	Water	0.0	Total		100
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16	2	Page 27 of 103	Sales Gas Custody Transfer Metering:	Pressure rating is missing. Based on the operating temperature and pressure for sale gas, Bidder are considering 600# pressure class. Please confirm if this is acceptable.	Class 600 to be considered. Also Refer Point-14
17	2	Page 27 of 103	Gas chromatograph for composition and calorific value measurement.	Our understanding is that one GC - C6+ is required for BTU measurement and is under the bidder's scope. Please confirm. Please note that, apart from the Gas Chromatograph (GC), as per PNGRB guideline RGSR 541 – Gas Quality Measurement, parameters such as HCDP, Water Dew Point, H ₂ S, Total Sulphur, etc., are required to be measured at the Gas Source. Hence, Bidder request you to kindly confirm the requirement for Gas Quality Measurement. The PNGRB guideline is enclosed as Annexure-2 for your ready reference.	1.C6+ GC - Bidder understanding is correct. 2.Measurement of HCDP, Water Dew Point, H ₂ S, Total Sulphur, etc. shall be carried out by SunPetro separately.
18	2	Page 27 of 103	Flow computer	Bidder understand that each skid has 2 metering fingers, so Bidder are considering two flow computers (FC). Please advise if an HMI/supervisory system is required. If a system architecture exists, please provide it.	1.Bidder's understanding is correct for two flow computers. 2. HMI/ Supervisory system is required. 3. Bidder shall develop system architecture.
19	2	Page 27 of 103	Flow computer	Please provide the location of the skid and control panel, along with the distance between them.	Distance can be considered 10 - 15m. And location will be provided post award.
20	2	Page 27 of 103	Metering principle: Ultrasonic Gas Flow Meter or Senior Orifice.	Based on the process parameters provided, the Gas Metering Skid size will be 2". Please note that GUSM is not available in 2" size for custody transfer applications. Therefore, as an alternative, Bidder would like to propose a Coriolis Meter. Kindly refer to the attached Annexure-1 and confirm your acceptance	Tender condition to be followed.
21	2	Page 27 of 103	Complete skid with filters, isolation valves, and bypass lines	Please provide datasheets if available. Otherwise, Bidder will offer standard international specifications suitable for this application.	Bidder may propose their Standard and proven specifications.

22	2	Page 28 of 103	Plot plan	Please share the plot plan or space availability at the site to finalize skid layout and design, and estimate interconnecting pipes to avoid delays during execution.	Shall be shared during detailed engineering, bidder may propose minimum area required.
23	2	Page 28 of 103	Cable scope	Our scope is limited to supplying a new Flow Computer (FC) with its associated panel. Our understanding is that all site-related activities—including erection, installation, cable laying, glanding, termination, tray and junction box installation, and integration with the existing panel—will remain under purchaser scope or their designated contractor. Please confirm.	Site-related activities—including erection, installation, cable laying limited upto flow computer, glanding, termination, tray and junction box installation is in the Scope of Vendor including Civil, structural, piping works.
24	2	Page 28 of 103	Contractor shall consider all the civil and structural jobs for successful installation and commissioning of CTM skid and all the piping job for hooking up with existing system in their scope.	Bidder request that civil work, site installation, and hook-up with the existing system remain under purchaser scope or their designated contractor.	Civil work, site installation, and hook-up with the existing system are in Scope of Vendor and shall quote as a Lump Sum Scope for these subject works as an option.
25	2	Page 32 of 103	Civil / Structural		
26	2	Page 28 of 103	Contractors shall ensure the material of construction and painting system of different equipment considering the corrosive coastal environment.	The piping material will be supplied with EN 3.1 certification and will follow a Non-NACE requirement. Please confirm if this approach is acceptable considering the project specifications and the coastal environment.	Acceptable

27	2	Page 28 of 103	All the startup and commissioning spares shall be in the scope of Contractor. Contractor shall submit the list of 2 years' recommended O&M spares including price part along with bid for evaluation.	The list of spares is not available. Please provide the same. Bidder recommend providing a spare philosophy so all bidders are aligned.	Startup and Commissioning is in Scope of Vendor. Vendor has to provide Start up and Commissioning Spares as a part of Scope of Work. Vendor shall suggest and propose two year operation spares, if any, along with Price. SunPetro shall review and order spares along with Work Order or during currency of Contract. The cost of 2 year spares will be extra.
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All other terms and conditions of the TD remain unchanged.

Regards,

Sun Petrochemicals Pvt. Ltd.