ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

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CORRIGENDUM

Amendment No. 05 dated 23.05.2021 To
TENDER NO. SJI6628P22

1.0 This addendum is issued to upload reply to Pre-bid queries.

2.0 All the Terms & Conditions of the Bid Document remain unaltered.

sd/-
A. D. SINGH
Manager (C&P)

PRE BID QUERY REPLY- TENDER No. SJI6628P22

1. ENERCON LOGISTICS & SOLUTIONS PVT LTD

Sl. No.	Tender Clause No. / Description/ Page No	Existing Tender Clause Description	ELS Queries	OIL's Comment
1	Section – 1 Scope of Work	Module 1: Design of Electrical Down hole heating (EDHH) system;	a)It is also not clear, what will be the position of EDH along the tubing string? Is it going to be at the end the tubing string or arethere going to be tubings/tail pipes after it? b)Will there be any decision to alter the location ofthe EDH in future as that would mean it would requirea through-bore design?	Vendor to provide the location that will be suitable for the maximum recovery of the well fluid, based on well profiles (i.e. vertical/ J-Bend/ Horizontal). Yes, flexibility to alter the location and through bore design will be preferable.
2	14.1. MODULE - I: DESIGN OF ELECTRICAL DOWN HOLE HEATING SYSTEM	BIDDER shall design the Down hole heating system to provide minimum 300 F temperature near to perforations. Engineering design shall include 'Thermal-Modeling' nodal analysis and the 'Tubing-Force-Analysis' also. Required information for the necessary analysis shall be by the COMPANY, on request. BIDDER shall submit 'Thermal-Modeling' nodal analysis and the 'Tubing-Force-Analysis'report along with the bid.	Please specify the list of modelling and analysis softwares that are acceptable to OIL.	There are multiple modelling software from reputed organisation like SLB/ HALLI/ PETROEXPERTS etc. **Tubing Force Analysis:** • TDAS (tbg design & analysis software by SLB) • WELLCAT (by Landmark Halliburton) **Thermal Modelling:** 1. PROSPER (by petroleum experts) 2. PIPESIM (By SLB)

				3. CMG Stars (By CMG)
3	Annexure AA Special Notes:	4)Tender has been invited for 02 Nos. (I.E Units) of DOWN HOLE HEATER& ACCESSORIES. However, OIL will initially procure 01 No of Electric Down hole heater with all accessories, spares including I&C of the unit with provisions of one year AMC. Depending on the performance of the procured unit and field operational requirements, the order for the procurement of the second unit will be placed at the same rate, terms &conditions. OIL reserves the right to cancel the order for the second unit. Bidder must categorically confirm the acceptance of the same in their bid.	It is uncertain that if OIL will buy the second heater as well, the performance criteria of the first heater is also not clear. So, we are requesting OIL to clarify this as this will heavily impact the pricing.	Scope of Work has been amended. Bidder is requested to refer revised SOW.
4	Annexure IB A. TECHNICAL: 1.0 BIDDER'S ELIGIBILITY	2.1 If the bidder is the original equipment manufacturer (OEM) of the offered item, 2.2 In case the Bidder is not the OEM of the offered item, but submitted their bid as authorized agent/dealer/distributor/supply house of OEM, then: 2.2.3 In addition to manufacturer's supply experience as mentioned in Para 2.2.2, bidder should have their own supply experience of supplying and installation of least one (01) No. of equipment/material as specified in Broad scope work of the tender document during the last 05 (five) years as on original bid closing date of the tender. Documentary evidence in this regard shall be submitted as mentioned in para 2.1.2.	ELS suggest OIL to give the relaxation on experience clause. There is no Indian manufacturer of DH heater. ELS has a distributorship from one of renowned heater manufacturer of Canada. The Canadian company is not very keen in direct participation in Indian tender. However, they have appointed us as their distributor & promoter in India. Heater is not common Oil field equipment and we don't have experience of supplying and installing the heater. However, we have supplied oilfield equipment to OIL companies before Hence, we request to amend the BEC clause that distributors can be the lead bidder if it meets the financial criteria.	No deviation is acceptable.

		2.3.2 The Indian company /bidder who will bid as Principal bidder must be from the field of manufacturing and supplying of oil & gas equipment as per API standards and "Technical Partner" must meet supply experience as specified under para 2.1.1 & 2.1.2 above. Documentary evidence shall be submitted as mentioned in para 2.1.2.		
5	14.3 Annual Maintenance Contract	The bidder must arrange accommodation, transportation and fooding for his personnel posted at well site for the purpose of the AMC.	This being an extreme remote location, will OIL be able to make arrange accommodation and fooding for the AMC contract personnel.	No Deviation but if so, will be on chargeable basis.
6	14.3.1 Applicable Charges	70% payment of the materials cost will be made on receipt of all the materials free from any defects against certification from Company (OIL)'s authorized personnel. Remaining 30% of material cost together with Installation & Commissioning charges will be paid after successful Installation and Commissioning of the equipment	ONGC and other oil companies are paying 85% against delivery, we request OIL to look in to this. There is a large capital investment to bring the technology and install the same. 30% is huge amount to hold back for installation. We request OIL to withhold only 10 to 15% for installation.	No deviation is acceptable.
7	10.RESPONSIBILITY: 10.1 GENERAL	The warranty shall cover a minimum of Twelve (12) months from the date of successful commissioning the equipment. The warranty shall fully cover against any manufacturing, handling, installation and commissioning defects and /or malfunctioning	It should be 18 months from the date of supply or 12 months from the date commissioning whichever is earlier	No deviation is acceptable.

2. SHILLOI ENERGY SERVICES PVT LTD

Sl No.	Tender Clause No. /Description/ Page No	Existing Tender Clause Description	SES Queries	OIL's Comment
1	Section – 1 Scope of Work	**Annexure II, 12. Delivery Period**	The Delivery period of 6 months, while sufficient in normal times, needs to be considered in light of the ongoing Pandemic Adequate clause should be inserted to ensure that order is not cancelled or revoked if Indian bidder is rendered unable to complete the supply by act of Indian Govt. which restricts work or production. Adequate extension should be provided by OIL as per Govt of India notifications on this matter.	Scope of Work has been amended. Bidder is requested to refer revised SOW.
		Annexure II, 13. A.05 Tubing Force Analysis	Please specify the objective of Tubing Force Analysis. Both wells are vertical wells and TFA would come into play in Deviated or Horizontal wells, or for coiled tubing operation in deviated wells OIL has also asked for Torque and Drag Analysis, which is separate from TFA. This is more appropriate for Vertical	Vendor to provide the location that will be suitable for the maximum recovery of the well fluid, based on well profiles (i.e. vertical/ J-Bend/ Horizontal). Considering the flexibility to alter the location will be TDA & TFA both have been given.

			wells. Please clarify that OIL requires TDA and not TFA.	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.
		Annexure II, 14.1 Module I, Design of EDH System The only specification mentioned is Minimum 300□F.	OIL has not indicated the exact purpose of installing this heater. Therefore, OIL would need to indicate the following in the technical specification of the Module 1. - Overall length of heating required. - Maximum Heat required or permitted - Does OIL require a constant heat or Variable Heat - Maximum OD of the heater - Where will the heater be positioned in the completion (would it be the very end of the string or would it have tubings/tailpipes below). - Will there be any decision to alter the location of the EDH in future as that would mean it would require a through-bore These details are critical to ensure all the bidders are providing a similar heater.	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.

			Without these details or specifications, Bidders would provide their own choice of heater and there cannot be a fair price comparison. While one Bidder may provide the best fit for OIL's purpose another may bid the lowest priced product to meet this one single criteria and win the bid. Under current specification, bidder will only be responsible to demonstrate that heater will heat upto 300°F. – whether that serces Oil's purpose for this investment or not.	
		Annexure II, 14.2 Module II, Material to Supply OIL has Specifically asked for certain items with model number. This would not be possible as these numbers indicate models of other manufacturers. Also there are many items listed in 14.2, which are not required by our OEM. The supply of the same is not required for our model of Heater. Example : - Step Up Transformer	These specific items should be removed as Surface equipment of different bidders would have different designs. Basic requirement would be surface connection, Junction box, Control Panel Capable of operating either directly with power from Generator or through Transformer. Bidder to provide this list to OIL	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW. Bidder should design the EDH as per the Scope of Work of the NIT.

		- UPS (50-07-40 MKM) is a Pskov Geocable equipment used to control the heater, other bidders cannot supply this - Thermocouple : we do not need these for our hearters - Required Electric Power Pack : this is not understood – as the Power pack would be the Generato	Electric Power Pack is not understood. The power is from Generator. Please clarify the utility of Electric Power Pack	
		Annexure II, 14.2 Module II	j) Control Panel The IP protection of the Control Panel is not specified by OIL There is huge price difference between different IP/NEMA Protections. Without specification of these Protections, there cannot be a proper price comparision between different offers. One bidder may provide the best protection from sand and water while another may provide the lowest priced item. OIL needs to define the IP protection of the control panel for a fair comparison of technical offer.	The IP to be considered based on site climatic condition, which is already specified. The recommended as per OIL's requirement will be IP64.

		Annexure II, 14.3 Module III Call out of 30 days for installation	I) Thread for Equipment would be EUE. Cross over from Bidders connection to EUE should be acceptable. Current condition of the Pandemic has restricted the Visa and movement of personnel from outside India. Quarantine and other forms of govt rules delay the incoming personnel Please extend this call out period to atleast 45 days to allow for Quarantine and other measures implemented by the Govt. MOHA clearance for the expatriates are controlled by MoHA, OIL shall obtain these for the Bidder, as we cannot obtain these within 30 to 45 days	2.7/8" EUE connection will be required.
		Annexure II, 14.3.1 Applicable Charges 70% payment of the materials cost will be made on receipt of all the materials free from any defects against certification from Company (OIL)'s authorized personnel. Remaining 30% of material cost together with Installation & Commissioning charges will be paid after successful Installation and Commissioning of the equipment	OIL is paying only 70% of the equipment cost on delivery and Balance on Installation and Commissioning. OIL may please define the maximum time by when Installation would be completed. A significant portion of the Payment is depended on the installation by OIL. Therefore, it cannot be open ended. IF	No deviation is acceptable.

			OIL does not install for 12 months, the bidder is penalized by not being paid for 12 months We request a period of 2 months from date of Supply to OIL, should be considered for installation. This may be extended by Mutual Consent. If installation is not completed within defined period by OIL or is not extended by Mutual consent, an additional 20% payment should be released to the Bidder and 10% withheld until installation and commissioning. There is no definition of successful installation. Since 30% payment is related to "successful installation" OIL should define this term. Presently the clause is very open ended and either party would have right to accept or deny that the installation is "Successful".	
2	Annexure AA Special Notes:	4) Tender has been invited for 02 Nos. (I.E Units) of DOWN HOLE HEATER & ACCESSORIES. However, OIL will nitially procure 01 No of Electric Down hole heater with all accessories, spares including I&C of the unit with provisions	OIL will have to provide a time period by when the evaluation will be completed and decision on the 2nd heater would be taken. Price of Oilfield equipment	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.

		of one year AMC. Depending on the performance of the procured unit and field operational requirements, the order for the procurement of the second unit will be placed at the same rate, terms& conditions. OIL reserves the right to cancel the order for the second unit. Bidder must categorically confirm the acceptance of the same in their bid.	fluctuate considerably and without a specific and define time period prices cannot be held indefinitely. A period of 3 to 6 months from the Supply (not commissioning) of the 1st heater may please be considered. Bidder should be given the option of declining to supply the second Heater after a particular period of time (6 months) from the first supply.	
3	Annexure IB A. TECHNICAL: 1.0 BIDDER'S ELIGIBILITY	**2.1 If the bidder is the original equipment manufacturer (OEM) of the offered item,** **2.2** In case the Bidder is not the OEM of the offered item, but submitted their bid as authorized agent/dealer/distributor/supply house of OEM, then: 2.2.3 In addition to manufacturer's supply experience as mentioned in Para 2.2.2, bidder should have their own supply experience of supplying and installation of least one (01) No. of equipment/material as specified in Broad scope work of the tender document during the last 05 (five) years as on original bid closing date of	2.1 OEM can bid under own Experience : Since this is an LCB tender. Only Indian Bidders are permitted to participate There are no manufacturer of EDH in India, therefore all bids would have to be under OEM support from outside India. 2.2.3 Since the manufacturer is providing guarantee for the the equipment and AMC – the distributor experience is not required for supplying and installation of DH Heater. OIL is the only company which	No deviation is acceptable.

		the tender. Documentary evidence in this regard shall be submitted as mentioned in para 2.1.2. 2.3.2 The Indian company /bidder who will bid as Principal bidder must be from the field of manufacturing and supplying of oil & gas equipment as per API standards and "Technical Partner" must meet supply experience as specified under para 2.1.1 & 2.1.2 above. Documentary evidence shall be submitted as mentioned in para 2.1.2. 2.3.2 If there is a technical collaboration then the Indian company should be a manufacturer of API quality Oilfield products	has purchased heaters in the last 3 to 4 years. Only one or two companies will have the experience of supply and installation. This clause restricts bids to only 1 company and denies OIL competitive bids. 2.3.2 The logic is not understood. If Indian bidder has to be a manufacturer, then significant well qualified supply houses of repute will be restricted from bidding for this tender. Shilloi has supplied and Installed complex Pumps and accessories to ONGC over the last years, to complete satisfaction of ONGC. All the above BEC clauses are very stringent and limiting competition. The DH Heater is comparatively new technology in Indian market. OIL Rajasthan is the only user of this product. OIL will be restricted to single bids like the tender before and there will be only one single bidder !! This is against all	

			norms of PSU tendering. The tender is purely academic and irrelevant. SES suggest the following amendment in the BEC clauses which will allow the fair competition The clause should read that a) The Agent/Distributor should meet financial criteria and provide details of after sale services which are certified by the OEM and the Distributor should have experience of supply and installation of any downhole Oilfield Products like Pumps, Heaters, Lifting Systems etc.	
4	10. RESPONSIBILITY: 10.1 GENERAL	The warranty shall cover a minimum of Twelve (12) months from the date of successful commissioning the equipment. The warranty shall fully cover against any manufacturing, handling, installation and commissioning defects and / or malfunctioning	If oil does not install or for indefinite period, then warranty will continue for such indefinitely period. This should be limited to 18 months from date of completion of supply or 12 months from Commissioning –which is a standard clause in all oilfield and other industry Malfunction may occur from manhandling of the equipment or mistreatment of the equipment - Functionality of the equipment is established after installation and	No deviation is acceptable.

			commissioning is established to set parameters of OIL.	
5	14.1. MODULE - I: DESIGN OF ELECTRICAL DOWN HOLE HEATING SYSTEM	BIDDER shall design the Down hole heating system to provide minimum 300 F temperature near to perforations. Engineering design shall include 'Thermal-Modeling' nodal analysis and the 'Tubing-Force-Analysis' also. Required information for the necessary analysis shall be by the COMPANY, on request. BIDDER shall submit 'Thermal-Modeling' nodal analysis and the 'Tubing-Force-Analysis' report along with the bid.	We request OIL to provide the specific requirement of these modelling. There are many types of modelling, and we want to understand the factors, data, results and analysis that OIL is looking for in these modellings. The present modelling requirement for TBA and Themal Modelling seem very generic and also possibly very specific to one certain bidder or company. Please provide the exact requirement and we can suggest our modelling software which will achieve this. Example – OIL is looking for Torque and Drag which is more appropriate then Tubing Force, which is used in Deviated situation and not ideal for vertical situation.	The thermal modelling study should comprise of following minimum analysis: • Heat distribution/ temperature profiles around the heater and in the wellbore while in flowing/ shut in conditions. • Also it should provide the heat distribution in the wellbore. There are multiple modelling softwares from reputed organisation like SLB/ HALLI/ PETROEXPERTS ets. **Tubing Force Analysis:** • TDAS (tbg design & analysis software by SLB) • WELLCAT (by Landmark Halliburton) **Thermal Modelling:** • PROSPER (by petroleum experts) • PIPESIM (By SLB) • CMG Stars (By CMG)

				Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.
6	Annexure A	Step Up Transformer Generator G & K Cables I & J Cables	Item may not be required by all bidders to operate their Heaters. Please consider changing to "If Required" Please specify what accessories are required with the generator. Downhole Electric Power cable is the same as Downhole Electric Cold Cable Cold and Hot Cables are repeated in I and J We suggest OIL asks Bidder to provide the downhole components of the heater system alsng with the schematic of the entire installation. This will satisfy OIL that all required connections, cables, etc are present to install the heater. The present specifications are possibly from different tenders and hence has	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW. Bidder should design the EDH as per the Scope of Work of the NIT.

		L. 2 7/8" EUE Coupling	the potential for duplication of equipment. Presently it says Cannon Services Ltd. Please insert or equivalent, as there are many manufacturers of this item and our OEM may have its preference of supplier – as long as it matches OIL's requirement	
7	Annexure B	A. Take up ./ Pay off Unit	Please provide option of Electric or Hydraulic Operated Unit. The purpose of this unit is to Spool out the cable and reel in the cable during installation and un-installation. Both Hydraulic and Electrically operated units will provide this same service.	Electric/Hydraulic both are acceptable.

3. S.MARK INDUSTRIES LTD.

S/N	TENDER DESCRIPTION	BIDDER QUERY	OIL's Comment
1.	There is no specification of the Heater. It seems M/S OIL wants each bidder to design a heater based on the bidders best understanding to the geology and rheology of the formation	We seek clarification on how OIL will compete two heaters with completely different specifications of performance. Reason: Each bidder is open to make its own bid and OIL will not have any way to reject offers which do not meet its minimum criteria. This will lead to a very unequal competition. Bidder are aware that bid is finally won on lowest price basis. Lowest bidder may not provide the ideal heating specification.	The designs of heaters may vary. But the designing should be done in such a way that it serves the purpose of OIL as stated in the NIT and bidder must quote their prices accordingly.
2.	The tender asks for a quote for 2 heaters; As per tender, OIL will buy one, then evaluate the performance and then put in the order for the second one.	We seek clarification and confirmation to have a time defined for evaluation of the 1st heater and placing of order for second heater. Reason: Price of oilfield equipment vary a lot and there is no definite period by when OIL will decide on the second heater. This leaves installation of 2nd heater open ended.	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.
3.	There is no experienced Indian manufacturer of Downhole Heater	Kindly clarify this requirement	No deviation is acceptable. Bidder must meet NIT terms.
4.	The tender states that if there is a technical collaboration then the Indian company should be a manufacturer of API quality Oilfield products	We are a manufacturer of Oilfield equipment, however, we are not having the API certificates. We are manufacturing the product as per the API Standard. So kindly clarify if you need the proof of API Certification. The BEC clauses are limiting the competition and only one or two bidders can qualify, which is against PSU norms.	API certification for downhole equipment is required. Bidder must comply the same.
5.	Per tender, 70% of the equipment cost on delivery and there is ambiguity on the remaining payment.	We seek clarification on what is the maximum time by when Installation will be completed? We also seek clarification on a successful installation.	No deviation is acceptable.

S/N	TENDER DESCRIPTION	BIDDER QUERY	OIL's Comment
6.	Tender is asking for bidder's personnel.	We seek clarification that this would be only for installation and not on a regular basis or yearly O&M contact.	Please be guided as per SOW of NIT and subsequent revisions and amendment to the same.
7.	Warranty clause states 12 months from date of commissioning	We seek clarification on fixed date for commissioning. As per oilfield industry standards, warranty is limited to 18 months from date of completion of supply or 12 months from Commissioning.	No deviation is acceptable.
8.	Tender states that malfunction is a warranty issue.	We seek clarification on definition of malfunction. Reason: Malfunction may occur from mishandling of the equipment or mistreatment of the equipment - Functionality of the equipment is established after installation and commissioning is established to set parameters of OIL.	No deviation is acceptable.

4. <u>GAURAV ASSOCIATES</u>

S/N	TENDER DESCRIPTION	BIDDER QUERY	OIL's Comment
1		In the two wells in question we would like to know if the fluid mobility issue is in the near wellbore and reservoir around the perforation zone or is the mobility issue found in the wellbore below or above the pump?	Analysis could not be done with respect to reservoir, however the design of the heater should be carried considering the depth of the well, viscosity and API of crude.
2		What will establish the criteria for success of the project? Is Temperature at the zone requested the only criteria for successful performance of the equipment? Please appreciate we ask this query because modelling the production rate is going to be difficult based on the information provided.	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW. Bidder should design the EDH as per the Scope of Work of the NIT.

S/N	TENDER DESCRIPTION	BIDDER QUERY	OIL's Comment
3		What is in the scope of the wellhead required? From the tubing hanger up? Or the entire unit?	Bidder to note that Scope of Work has been amended. Bidder is requested to refer revised SOW.
4		Do the wells typically produce sand when using a recip?	Sanding issues during production has not been found in any of the wells.
5		Does sand bridging occur on the liner?	Sanding issues during production has not been found in any of the wells.

Sl No.	M/s. Neena Hands Query	OIL Reply
1	Oil well pressure measurement report (year month day; well depth; temperature; Temperature gradient / 100 m) should also be provided so during the designing it will help us. a. please share flow pressure flow temperature report for the production stage wells; b. please share The static temperature and pressure report for stabilized shut-in wells -- well data in the same area should also require	Basic well data have been provided in the SOW. Please refer to the revised SOW in the NIT.
2	please share Completion (or workover) report (including well structure drawing; Wellhead assembly diagram)	Provided in the NIT. Please refer to the revised SOW in the tender.
3	please share Statistical report of daily oil well production	Average daily production of the proposed wells have been provided in the SOW. Please refer to the revised SOW in the NIT.
4	please share Physical properties of oil: Viscosity-temperature curve; Percentage of wax and glue; Percentage of sulfur. Hydrogen sulfide content.	Crude oil properties have been provided in the SOW. Please refer to the revised SOW in the NIT. Percentage of Sulphur: 1.3% wt. **Details crude characteristics is attached**.
5	please share Dilute mixing method (temperature; quantity, inlet) and dilute mixing point depth	Not available.
6	please share OIL India's objective requirements: a. Remove the wax (glue) plug; b. clear hydrate plugging; c. Decreased dilute, d. Increase wellhole temperature; e. Increase pump suction temperature; F. Fire drive thermal extracting	Provided in the SOW. Please refer to the revised SOW in the NIT. The crude is highly viscous with average viscosity in the range of 10000-13000 cp at 40 deg C and API gravity in the range of 14-17 deg API. The Asphaltene content is 2.48% wt., Wax content is 0.8% wt. **So, OIL objective is to heat the perforation zone to extract the heavy oil with such high viscosity and low API gravity. Bidder to design the down hole heater considering the given crude characteristics.**

Characteristics of Jodhpur crude from OIL

Characteristics	As such	Dehydrated
Density, 15°C, kg/liter	0.9429	0.9438
Specific Gravity at 60/60°F	0.9434	0.9443
Gravity °API at 60°F	18.49	18.35
Reid vapor pressure at 37.8°C		
kg/Cm^2		0.044
K Pa		4.3
Viscosity, Kinematic, cSt, at 40°C		10964.25
Pour point, °C		+9
Salt content, Lb/1000 bbl (PTB)	1.3	
Sulfur, Total, % wt.		1.3
Micro Carbon residue, % wt.		12.41
Asphaltene content, % wt.		2.48
Wax content, % wt.		0.8
Sediment & water (BS&W), % vol.	Trace	
Water content, % vol.	0.5	
Total acid value, mg KOH/g		0.23
Trace Metals, ppm		
Iron		5.80
Nickel		19.30
Copper		<1.00
Vanadium		8.20
Zinc		<1.00
Light Hydrocarbon Analysis, % wt.		
Methane		0.01
Ethane		0.06
Propane		0.1
Iso-butane		0.03
n-butane		0.1
Iso-pentane		0
n-pentane		0
Total upto C_5		0.3
LPG POTENTIAL (C_3+C_4)		**0.23**