



EXPRESSION OF INTEREST (EOI) NO. OIL/RF/IND/EOI/011/2022 FROM INTERESTED ENTITIES FOR DESIGN OF THE SURFACE FACILITIES FOR PRODUCTION OF HEAVY CRUDE OIL FROM BAGHEWALA FIELD, RAJASTHAN OF OIL INDIA LIMITED.

1.0 PREAMBLE:

OIL INDIA LIMITED (OIL), a premier National Oil Company, is engaged in the business of exploration, production and transportation of crude oil and natural gas for over five decades. It is a Navratna Company under Ministry of Petroleum and Natural Gas, Government of India and the second largest National Oil Company in the country. Rajasthan Field, one of the hydrocarbon field of OIL, is engaged in exploration and production of Natural Gas from Jaisalmer Basin and exploration of Heavy oil in Bikaner-Nagaur basin within Jodhpur Sandstone of Infracambrian age of Western Rajasthan in India. OIL intends to be exploiting heavy oil from Baghewala structures with state-of-the-art technology CSS (Cyclic Steam Stimulation) which is a Thermal Enhanced Oil Recovery process.

This heavy oil is then lifted through Artificial lift system like SRP. The major challenge is to bring the oil from different well location to a centralized storage facility for further processing and transportation to nearby refiner. During the whole process the flowability of the heavy crude oil to be ensured, for which service provider shall provide suitable solution, suggesting state of the art technology with focus on cost reduction for processing of heavy crude oil and provide consultancy services thereof.

2.0 OBJECTIVE:

- OIL invites Expression of Interest (EOIs) from reputed and established E&P Service Providers/Agencies/Firms who are having design expertise in handling of heavy crude oil (with thermal recovery). The service provider shall be capable of carrying out needful testing, analyzing, predicting well head fluid behavior and ensure designing of the surface production facilities (including treatment and separation set up) with flow assurance of heavy crude oil.
- This document addresses the requirement of services from a reputed SERVICE PROVIDER having adequate knowledge base and experience in the field of Heavy Oil production. OIL is looking for globally reputed oil and gas engineering companies having technical expertise, analyzing well head fluid, assuring separation performance with changing water %, assuring flow assurance for all the predicted flow scenarios. The service provider shall have the experience of designing of surface facilities for processing of similar heavy Crude oil fields (like at Baghewala in Jaisalmer district of Rajasthan fields in India). This EOI is intended to lookout for such experienced companies.

- **Service provider’s capabilities:** Interested companies to demonstrate their capabilities in providing such services required for establishing the design of **Surface Facility for Heavy Oil Production and flow assurance from Baghewala fields of OIL, Rajasthan Fields.**
- **Duration of service:** The service will be required in phases. Initially in Phase I, the work involves a conceptual design involving laboratory trial and finalizing a proven scheme. The study phase to include Technical laboratory study using actual well head fluid, emulsion prediction and management by chemical injection, selection and suggesting the best available technology & equipment based on the lab inputs and industrially proven practice. Subsequently in phase II, a design basis and a scope of work for EPC contractor to be developed. The designing the surface facilities with focus on the cost reduction and fuel-efficient system will need to be developed. The service provider will also be involved the bid evaluation and technical recommendation for selection of EPC contractor. The total time spend for these two phases will be within Nine (09) months.

On completion of Phase II and after selection of EPC contractor, the service provider will assume role of PMC (project management consultants) as Phase III activity. During this phase PMC will manage detailed design, procurement monitoring, construction, project control management activities till commissioning and handover.

3.0 LOCATION OF THE AREA

The project site at Baghewala oilfield is nearly 250 KM from Jodhpur, Rajasthan. Nearest railway station is Phalodi which is about 100 KM by road from the project site. Nearest airport Jodhpur which is about 250 KM from the site.

ENVIRONMENTAL CONDITIONS:

Components	International System (SI)
Ambient Temperature (Max. / Min.)	50 / -1 Deg C
Humidity (Max.)	40-60%
Average Rainfall	25 mm/year
Wind velocity (Max.)	128 KM/Hr.
Frequency of Sandstorm	March to September and occasional during the remaining period.

Seismic Zone	III, Moderate
Weather	Four distinct seasons - Pre monsoon, monsoon, post-monsoon and Winter
Topography of Site	Part of Thar Desert

RESERVOIR/ROCK MATRIX/PETROPHYSICAL CHARACTERISTICS:

Description	Parameters	Value
Reservoir Parameters	Reservoir Depth	1050 – 1300 m
	Pay Thickness	5 – 23 m
	Bottom Hole Pressure	1600 psi @ 1100m at BGW structure and 1044 psi @ 1190m in neighboring Punam Structure
	Bottom Hole Temperature	50C – 52C
Rock Matrix Characteristics	Porosity	18 – 20%
	Permeability	Less than 1000 MD
Petro-physical Characteristics	Deg API	14-18
	Pour Point(°C)	21 – 27 deg
	Sp. Gravity	0.9679 – 0.9229
	Viscosity (cp)	Approx. 13000 cp at 50 deg C
Crude Characteristics	Resin:	12.5 %
	Asphaltenes	7.25 %;
	Paraffin	17.5%
Gas specific Gravity		Nil
Water cut		Almost Nil

4.0 BROAD SCOPE OF WORK:

The scope of work/services includes but not limited to the following:

For Phase I & II

- Analyze the properties of heavy crude oil.
- To assess existing production infrastructure of the fields.
- Suggesting the technology for surface production facility for flow assurance of such heavy crude oil at the surface.
- Suggesting the design of the flowlines from existing and upcoming wells to the proposed surface facility.
- Focusing on the cost reduction, fuel efficient systems while designing the surface facility
- Option of induction of Solar energy for processing of heavy crude oil
- Developing a strategy for further development of the fields based on the existing and future wells.
- Preparation of scope of work for Surface Facility including mechanical, electrical, instrumentation, firefighting and best HSE practices.
- Application of Best HSE practices in upstream oil and gas industry as per the law of the land.
- Finalization of conceptual scheme (approval from OIL) and a design basis meeting sub surface requirements of the pilot.
- Preparation of PFD, preliminary heat & material balance, SLD, preliminary plot plan, control and safeguarding philosophy, operating & maintenance philosophy, material specification is to be developed by the service provider. Process Data Sheet of all long lead items are also to be developed by service provider.
- The service provider will assist company in evaluation of EPC selection including technical clarification, technical bid evaluation, finalizing technical recommendation for EPC selection.

5.0 DESIGN BASIS

The entire plant will be modular in structure both in terms of layout and operation to the extent possible.

a) Properties of Heavy crude oil:

As provided above in Petrophysical parameters

b) Design Capacity:

Heavy oil production: 1000 Bbls/Day with provision for expansion.

Natural gas production: NIL.

Formation water: Vary from well to well.

c) Wells and production at well site set up:

Presently 8 numbers of heavy oil wells are under production and production is around 150 Bbls/Day. These wells are produced by

using Sucker Rod Pump (SRP) at the well site and production is collected at well site tank and loaded in the tankers using high pressure steam for flowability at well site. There is no separation facility available due to flow assurance problem of the crude.

Another 14 wells are being planned to be drilled in and around existing structure and production is expected to be around 1000 Bbbl/Day. All these wells will be produced using artificial lift like Sucker Rod Pump (SRP), Progressive Cavity Pump (PCP) along with Electric Downhole Heater (EDH) However, number of well to be connected to the facility for production will be in phases and shall be decided by OIL.

- 6.0** Service Provider/ Contractor/ Vendor will demonstrate their experience and capability against this EOI.
- Service Provider/ Contractor/ Vendor/ Company will provide the following Information:
 - Details of Service Provider/ Contractor/ Vendor's Company Incorporation along with Date and Place of Incorporation.
 - Contact Details
 - Name of concerned person
 - Designation
 - Telephone number
 - Mobile number
 - Fax number
 - Address e-mail
 - If a Joint Venture/Consortium is proposed, Name, Address, Phone, E-mail of all Joint Venture partners /consortium members.

7.0 GENERAL NOTES:

- i. All documents submitted along with the EOI should be clear & legible.
- ii. The EOI is liable to be ignored in case of submission of any misleading / false representation by the Service Provider/ Contractor/ Vendor/ Company.
- iii. OIL INDIA LIMITED reserves the right to ignore any or all EOIs and also to curtail/ enhance the scope of work stated above, if required, without assigning any reason thereof.
- iv. This EOI is non-binding in nature and submission of information should not be considered as shortlisting / selection for company in any subsequent RFP/ Tender/ Bid process that may be undertaken in future.
- v. OIL reserves the right to terminate the EOI process at any point of time without assigning reason.
- vi. No participant shall contact OIL on any matter relating to the EOI after the last date of submission of EOI unless requested for so in writing. Any effort by the service provider to influence OIL in the decision making in respect of EOI will result in the rejection of that service provider.

- vii. Based on the responses received against this invitation, a virtual meeting/ offline discussion (as per convenience of OIL) may be held with the responding Service Provider/ Contractor/ Vendor/ Company to discuss on the information/ views submitted. Date and time shall be intimated separately.

8.0 SUBMISSION OF EOI:

- 8.1 Interested parties meeting the pre-qualifying criteria as above are invited to submit their EOI at our e-mail id: **cmpakhale@oilindia.in**, and **diganta.pathak@oilindia.in** within 28.02.2022, followed by hard copies of the same through courier/post super-scribing “Expression of Interest No.: **OIL/RF/IND/EOI/011/2022**” at the following address:

**ASSET MANAGER – RAJASTHAN ASSET
OIL INDIA LIMITED
2A District Shopping Center,
NH62, Saraswati Nagar,
Jodhpur, Rajasthan 342005
Email: cmpakhale@oilindia.in, diganta.pathak@oilindia.in**

The offer(s) may also be uploaded in Parties’ FTP server/ File sharing website (portal) and the link(s) may be provided to us at our e-mail within above specified period.

- 8.2 The offer(s) should have clear indication of meeting the requisite experience as mentioned in pre-qualifying criteria.

- 9.0** This EOI is not an invitation for bids for design and implementation of surface facilities at OIL, Rajasthan Field.

10.0 OIL reserves the right to:

- (a) accept or reject any/all offers submitted by parties,
- (b) cancel the process at any time without any liability and assigning any reason thereof.

- 11.0** All Corrigenda, addenda, amendments, time extensions to the EOI will be hosted on the website and no separate notification shall be issued in the press. Prospective participants against the EOIs are requested to visit the website regularly to keep themselves updated
