

**EXPRESSION OF INTEREST FOR SUPPLY OF
SURFACTANTS FOR EOR APPLICATION FOR RAJASTHAN BLOCK, INDIA**

Cairn, Oil and Gas, a vertical of Vedanta Limited (“Operator”) is the Operator on behalf of Joint Venture (“JV”) partners Cairn, Oil and Gas Vertical of Vedanta Limited and Oil and Natural Gas Corporation (“ONGC”), of the Contract Area RJ-ON-90/1 at Barmer in the state of Rajasthan, India. The RJ-ON-90/1 Block contains northern oil discoveries namely Mangala, Bhagyam and Aishwarya & Associated fields. Operator in JV with ONGC is operating an onshore oil and gas processing facility known as Mangala Processing Terminal at Nangana village near Kawas about 25 kms from Barmer, Rajasthan, India for processing of crude from Mangala, Bhagyam & Aishwarya well pads.

Operator is currently executing polymer flood operations in its Mangala field, and is at initial stages of implementation at Bhagyam and Aishwarya fields. To further increase recovery from MBA, a successful ASP pilot was also implemented in the Mangala field. Based on the results of the pilot and various studies, full field ASP implementation is now being planned across the three fields.

Scope of Supply:

Vedanta envisions ramping-up production from the MBA fields on a fast track basis and sustaining it thereafter for several years by significantly enhancing the ultimate recovery factors. To achieve these objectives, Vedanta on behalf of itself and its joint venture partners is seeking Expression of Interest from reputed, reliable & experienced Global Surfactant supplier with end to end quality assurance & responsibility for supply of:

- A. Tristyryl Phenol Propoxy Ethoxy Sulfate (TSP-(PO)₃₅-(EO)₂₀-Sulfate)**
- B. (C₁₅-C₁₆) Linear alkyl Benzene Sulfonate**
- C. C₂₀₋₂₄ Internal Olefin Sulfonate**

Respondents are requested to evince interest for either / more of the following options:

S.No.	Options	Yes or No
1	Supply of product A	
2	Supply of product B	
3	Supply of product C	
4	Supply of industrial blend* for products A and B with overall Quality responsibility	
5	Supply of industrial blend* for products A and C with overall Quality responsibility	

*Blending guidelines shall be provided to interested respondents on request.

Only those companies possessing substantial and proven record of performance in supplying of Surfactants globally should respond to this:

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
 T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

TECHNICAL GO – NO - GO

Options	Product	Go-No-Go	Yes/No
1	Product A	Minimum two years of prior experience in alkoxylation/sulfation process of surfactants manufacturing and willingness to provide Product A (by outsourcing either alkoxyated surfactant or sulfation of surfactant) with end to end Quality responsibility.	
		Manufacturing capacity of minimum 5000 MT of alkoxylation or sulfation of 5000 MT of alkoxyated surfactant annually.	
2	Product B	Minimum two years of prior experience of manufacturing of Linear Alkyl Benzene (LAB) or sulfonation of LAB and willingness to provide Product B (by outsourcing either LAB or sulfonation of LAB) with end to end Quality responsibility.	
		Manufacturing capacity of minimum 5000 MT of LAB or sulfonation of 5000 MT of LAB annually	
3	Product C	Minimum two years of prior experience of manufacturing of alpha/internal olefin derivatives or sulfonation process of alpha/internal olefins and willingness to provide Product C (by outsourcing either alpha/internal olefins or sulfonation of alpha/internal olefins) with end to end Quality responsibility.	
		Manufacturing capacity of minimum 5000 MT of Internal/alpha olefins or sulfonation of 5000 MT of Internal/alpha olefins	
4	Industrial blend of A+B	Prior experience of supply of industrial blend of surfactants and willingness to provide Blend of Product A+B with end to end Quality responsibility.	
		Passing the experience and capacity Go- No- Go for either Product A or Product B	
5	Industrial blend of A+C	Prior experience of supply of industrial blend of surfactants and willingness to provide Blend of Product A+C with end to end Quality responsibility.	
		Passing the experience and capacity Go- No- Go for either Product A or Product C	

FINANCIAL GO – NO - GO

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
 T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai – 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

Financial performance:

- 1) A positive net worth in the immediately preceding two financial years.
- 2) Turnover in each of the preceding 2 financial years should be equal to or more than the estimated average annual contract value.
- 3) Liquidity ratio of bidders in each of the preceding two financial year shall not be less than 0.60

Documents to be submitted as a proposal for pre- qualification

1. Letter of intent (on letter head) to participate in the EOI [Expression of Interest] clearly indicating the EOI reference along with company information detailing their nominated management, staff, and business process support.
2. A declaration on bidder's company letter head, signed and stamped by an authorized signatory of the bidder, that the bidder shall be responsible for end to end quality of the products for which the bidder expresses the interest through this EOI.
3. Documents in support of financial capabilities:
 - a. **APPLICANTS** are requested to submit company's financial performance documents (Audited Balance sheets, Profit and Loss Account & cash flow statement, Auditors Report and Notes to Accounts etc.) for the preceding five financial years. Latest financial statement **should not be older than 15 months** on the date of submission of response to Expression of interest.
 - Normally standalone financials of the bidding entity only will be considered. However, if Parent Company Guarantee (PCG) is submitted then consolidated financials at the bidding entity level can also be submitted. This should be clearly mentioned in the EOI response.
 - b. In case of unaudited statements (if there are no audit requirements for auditing of financials as per the local law), the financials shall be accompanied by a certificate from a Certified Accountant. Certificate should also mention the fact that there is no requirement of audit of the financials as per the local law.
 - c. Provide information regarding revenue/turnover from surfactant business for the last two years.
 - d. List of litigations in last 5 years, if any.
 - e. Declaration specifying that the APPLICANT is not under liquidation, court receivership or other similar proceedings

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

4. Documents in support of technical capabilities: Companies are requested to submit details of their manufacturing capabilities indicating :
- Overall manufacturing capacity along with individual Reactor capacities & their geographical spread. Related details along with its cumulative capacity utilization for past two financial years & planned capacity addition in the next two financial years for all the manufacturing facilities
 - End to end capability of the end products/details of tie ups/subcontracting of intermediate process steps
 - Alkoxylation (PO and EO) capabilities for Product A (in the format provided in Table A)
 - Sulfation capability using SO₃ (in the format provided in Table A)
 - Sulfation capability using sulfamic acid batch process (in the format provided in Table A)
 - Manufacturing Capability of LAB for Product B (in the format provided in Table A)
 - Sulfonation Capability of LAB for Product B (in the format provided in Table A)
 - Manufacturing Capability of alpha/internal olefins for Product C (in the format provided in Table A)
 - Sulfonation Capability of alpha/internal olefins for Product C (in the format provided in Table A)
 - Sulfonation experience using Thin Film Technology
 - Raw material/Feed stock availability and backward integration (in the format provided in Table B)
 - Experience in manufacturing Heavy (C₉+) Linear Alkyl Benzene (LAB) for Product B.
 - Experience in manufacturing Alpha/Internal Olefin for Product C.
 - Experience in manufacturing and supply of industrial blends of surfactants.
 - Range of pH of solutions that are blended in previous projects.
 - Provide a list of publications produced from relevant projects in the past.
 - Provide information regarding the consistency and reproducibility of similar manufactured products based on your experiences.
 - Provide information regarding laboratory setup for conducting quality checks for surfactants- Equipment capability and procedures. Specify the tests which are done in-house or outsourced.
 - Please provide information regarding experience with micro emulsion phase behaviour samples for chemical EOR, if any, and availability of equipment to conduct these phase behaviour experiments
 - Details of Research and Development centres along with case studies (if available) for resolving production chemistry related issues.
5. Documents in support of commercial capabilities :
- Bidder shall submit a separate list of contracts executed along with volume supplied and delivery terms (in the format provided in Table C)
 - Existing packaging options [ISO tanks, Flexi Bags, Drums, 1 Ton Big bags, Containerized etc.]
 - Experience of shipping surfactants in ISO tanks, containers etc. with the volumes handled.
 - Capability to supply concentrate surfactant bulk (in terms of volumes).
 - Lead time for the commercial production of surfactants or blend
 - List of projects (with details on description of work, operator, value, duration of contract, etc.) for chemical management services & supply for production chemical(s) in upstream O&G processing facility done in last 05 years. Parent company or Affiliate's experience can be submitted and considered. This should be clearly mentioned in the EOI Response.

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

6. Documents in support of Health, Safety, Environment & Quality [HSEQ] performance : Companies are requested to submit
- a. Duly filled HSE Questionnaire (Appendix 6)
 - b. Duly filled Quality Questionnaire (Appendix 8)

The interested suppliers should evince interest to participate in the Expression of Interest by clicking on the “**Evince Interest**” link against the corresponding EOI listing on the Cairn India website i.e. <https://www.cairnindia.com>. Further to this, interested suppliers would be invited to submit their response via Smart Source [Cairn’s e Sourcing Platform]. The suppliers would be requested, as a minimum, to submit the above mentioned documents and details for prequalification via Smart Source.

The interested suppliers should evince interest to participate in EOI within 25 days of publication of Expression of Interest.

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai – 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

Annexure 1A: Table A

Reaction/product	Manufacturing Locations	Reactor Type & Size in each location	Capacity in each location	Available Capacity in each location	Capacity Addition plans in the next two years	Past experience in handling in these chemicals	Capacity utilization for the last two years in each location
Alkoxylation/Sulfation							
LAB/Sulfonation of LAB							
Alpha Olefin/Internal Olefin/ Sulfonation of alpha or internal olefin							

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
 T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

APPLICANT Questionnaire / Check List

Please furnish reply to each item in this Questionnaire Matrix/Check List under "Applicant's Reply" column. If any additional information (appendix/annexure/attachment) is furnished by the Applicant in support of its reply/proposal, the same shall be identified in the Remarks column.

S. No	Description	Applicant Reply	Remarks/Annexure/ Attachment
1.0	Letter of Interest, Identification of Bidding Entity and Mode of Participation		
1.1	Applicant furnishes the Letter of Interest in response to this EOI.	Furnished / Not Furnished	
1.2	Applicant to identify the following:		
	a) The Bidding Entity		
	b) Name of the Bidder/Address/Contact Details		
	c) Mode of participation (Single Bidder / Consortium)		
	d) Brief Summary of Bidder's credentials/past experience		
2.0	Documents in support of financial capabilities	Furnished / Not Furnished	
	a. Audited Balance sheets, Profit and Loss Account & cash flow statement, Auditors Report and Notes to Accounts etc.) for the preceding five financial years. (Latest financial statement should not be older than 15 months on the date of submission of response to Expression of interest.)		
	b. List of litigations in last 5 years, if any.		
	c. Declaration specifying that the APPLICANT is not under liquidation, court receivership or other similar proceedings		
3.0	Documents in support of technical capabilities	Furnished / Not Furnished	
3.1	Refer and fill in Table A & B		
3.2	a. Overall manufacturing capacity along with individual Reactor capacities & their geographical spread. Related details along with its cumulative capacity utilization for past two financial years & planned capacity addition in the next two financial years for all the manufacturing facilities		
	b. End to end capability of the end products/details of tie ups/subcontracting of intermediate process steps		
	c. Alkoxylation (PO and EO) capabilities for Product A (in the format provided in Table A)		
	d. Sulfation capability using SO ₃ (in the format provided in Table A)		
	e. Sulfation capability using sulfamic acid batch process for Product A (in the format provided in Table A)		
	f. Manufacturing Capability of LAB for Product B (in the format provided in Table A)		
	g. Sulfonation Capability of LAB for Product B (in the format provided in Table A)		
	h. Manufacturing Capability of alpha/internal olefins for Product C (in the format provided in Table A)		
	i. Sulfonation Capability of alpha/internal olefins for Product C (in the format provided in Table A)		
	j. Sulfonation experience using Thin Film Technology		
	k. Raw material/Feed stock availability and backward integration (in the format provided in Table B).		
	l. Experience in manufacturing Heavy (C9+) Linear Alkyl Benzene (LAB) for Product B.		
	m. Experience in manufacturing Alpha/Internal olefins for Product C.		
	n. Experience in manufacturing and supply of industrial blends of surfactants.		
	o. Range of pH of solutions that are blended in previous projects		
	p. Provide a list of publications produced from relevant projects in the past.		
	q. Provide information regarding the consistency and reproducibility of similar manufactured products based on your experiences.		
	r. Provide information regarding laboratory setup for conducting quality checks for surfactants- Equipment capability and procedures. Specify the tests which are done in-house or outsourced		
	s. Please provide information regarding experience with microemulsion phase behavior samples for chemical EOR, if any, and availability of equipment to conduct these phase behavior experiments		
	t. Details of Research and Development centers along with case studies (if available) for resolving production chemistry related issues.		
4.0	Documents in support of commercial capabilities	Furnished / Not Furnished	
4.1	Refer and fill in Table C		
4.2	a. Bidder shall submit a separate list of contracts executed along with volume supplied and delivery terms.		
	b. Experience of shipping surfactants in ISO tanks, containers etc. with the volumes handled.		
	c. Existing packaging options [ISO tanks, Flexi Bags, Drums, 1 Ton Big bags, Containerized etc.]		
	d. Willingness to supply concentrate surfactant bulk (in terms of volumes).		

VEDANTA LIMITED
Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394

	e. Lead time for the commercial production of surfactants or blend		
	f. List of projects (with details on description of work, total project value, duration of contract, etc.) for chemical management services & supply for production chemical(s) done in last 05 years.		
5.0	Documents in support of HSE and Quality	Furnished / Not Furnished	
5.1	Refer and fill Appendix 6 and 8		
5.2	a. Duly filled HSE Questionnaire		
	b. Duly filled QA/QC Questionnaire		

Annexure 1B: Table B

List of Raw Materials and process steps (for product A/B/C)	Outsourced/In-house	Applicant's/ Vendor's Capacity & Availability	Vendor name & location (if outsourced)	Vendor's Revenue in USD & experience (Year wise of last 2 years)	Type of tie-up with Vendor
Ex: for raw material - Phenol/Styrene/Kerosene/ Benzene/LAB/alpha olefin etc.*					
Ex: for process steps - propoxylation/ethoxylation/ sulfation/sulfonation*					

*Details are required for the manufacturer, which may be the applicant themselves or their manufacturing subvendors

Annexure 1C: Table C

Supply of surfactants- Details of past orders

S.No.	Project	Client Name	Award Date	Contractual Delivery Date	Actual Delivery Date (if project is completed)	Forecast Completion Date (if project is undergoing)	Contract Copy Attached (Without pricing details)(Yes/No)	Brief Scope of Project	Contract Scope e.g., Project Management, Procurement, Design, Engineering, Construction, Installation, Testing, Pre Commissioning, Commissioning (please specify below)	Any subcontracting by lead buyer in project

VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394



VEDANTA LIMITED

Cairn Oil & Gas: DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram - 122002, Haryana, India
T +91 124 459 3000 | F +91 124 414 5612 | www.cairnindia.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L132O9MH1965PLC291394