



The Petroleum
Oil and Gas Corporation
of South Africa SOC Ltd
Reg. No. 1970/008130/07
151 Frans Conradie Road,
Parow, 7500
Private Bag X 5 Parow, 7499
Republic of South Africa
Tel +27 21 929 3000
Fax +27 21 929 3266

TO ALL INTERESTED PARTNERS

ENQUIRY NO: RFP 0004/2023

REQUEST FOR PROPOSAL (RFP)

**PROVISION OF FUNDING TO ENABLE PetroSA TO GENERATE SUSTAINABLE
REVENUE SOURCES FROM UPSTREAM ASSETS**

CLOSING DATE: 28 FEBRUARY 2023 at 15H00 (CAT)

(tenders@petrosa.co.za)

1. INTRODUCTION

PetroSA is calling on Interested Parties to submit funding proposals that will enable PetroSA to develop sustainable, revenue generating projects. The funds will be used to monetise the remaining gas potential in the Block 9 Production Rights, and to fulfil work commitments, including drilling of wells to discover and commercialise oil and gas in Block 3A/4A and Block 9&11a.

Interested parties are required to submit funding proposals for all, or a combination of opportunities/assets, listed hereunder. The proposal should be separated per opportunity/asset together with any conditions for the funding:

Directors:

Mr Nkululeko Poya (Chairperson),
Mr Llewellyn Delport, Mr Leon Haywood, Ms Nolubabalo Sondlo, Mr Mthozami Xiphu,
Group Chief Executive Officer (Acting): Ms Sandisiwe Ncemane
Group Company Secretary: Ms Marlene Khumalo

Table 1: List of Projects and Funding Requirements

Project Description	Estimated Funding Required
Enhancing Production on Existing Fields (Short Term) Production	
Increase flow of production on existing wells	R100 million - remediation program of chemical injection (4 wells) and/or USD 200 million - side-track existing, or new well/s (2 - 4 wells)
FO Field	USD 200 million (excludes any specialised interventions)
Oribi Oryx	USD 80 million
New Field Developments/Re-developments (Medium Term)	
E-BK Field Development	USD 250 million
E-AD Field Development	USD 100 million
E-S8 Infill/Redevelopment	USD 100 million
New developments from Block 9/11A Exploration (Long term)	
Block 3A/4A Exploration Right	Gravity and Magnetic acquisition and processing - USD 2.5 million 3D seismic survey - USD 5 million Exploration well - USD 50 million
Block 9 and 11a Exploration Right	USD 500 000 for a firm work commitment to reprocess approximately 1500 line km of 2D seismic data USD 19 million an additional contingent work programme includes the acquisition of a 3500 square km 3D seismic survey over the southern part of Block 9. USD 150 million drilling 2-3 exploration/appraisal wells.

The funding proposal/s received will be evaluated by PetroSA and followed by discussions with the Interested Parties.

Applications must be submitted electronically via email to tenders@petrosa.co.za on or before 28 FEBRUARY 2023 at 15H00 (CAT).

In keeping with the principles of good corporate governance, which includes adequate fraud prevention measures as required by the Public Finance Management Act (PFMA), PetroSA has established a **toll free hotline, No 0800 117 861**, where any act of fraud should be reported. This “whistleblower” facility is managed by an independent company that will ensure the anonymity of the whistleblowers and establish the substance of any allegations made.

2. BACKGROUND

The Petroleum Oil and Gas Corporation of South Africa SOC Limited (“PetroSA”), is a wholly state-owned company of the Government of South Africa and registered as a commercial entity under the South African law. PetroSA is a subsidiary of CEF SOC Limited (CEF) which is wholly owned by the State through the Department of Mineral Resources and Energy.

The core business activities of PetroSA are:

- The exploration and production of oil and natural gas
- Participation in, and acquisition of local/ international upstream petroleum assets
- The production of synthetic fuels from offshore gas at Gas-to-Liquid (GTL) refineries in Mossel Bay, South Africa
- The development of domestic refining and liquid fuels logistical infrastructure.
- The marketing and trading of oil and petrochemicals

The PetroSA GTLR facility has operated since the early 1990’s utilising indigenous natural gas reserves from its offshore Mossel Bay Field (Block 9/11a) in the production of synthetic motor fuels for the South African fuels market.

The facility in its original design can produce 36,000 bpd of fuels, derived from High Temperature Fischer Tropsch (HTFT) synthesis of natural gas, and supplemented with imported condensate feedstock to supplement indigenous gas and condensate feedstock.

Indigenous gas has been sourced from gas reserves developed by PetroSA offshore Mossel Bay and tied back into the FA Platform processing raw natural gas into gas and condensate streams conveyed to the onshore GTL facility in two subsea pipelines, respectively. Additional reserves (EM, SCG, and FO developments) have been brought into production since the original commissioning of the facilities in the 1990's, but these have now largely been depleted over the years of operation, and without further development of indigenous gas production or alternative feedstock strategies, the facility has run out of gas feed. The facility is capable of processing up to 18,000 bpd of condensate from either indigenous origin or via imports.

PetroSA also holds equity in Block 2A, Block 2C, Block 3A/4A, Block 5/6&7 and Block 9/11a offshore the coast of South Africa.

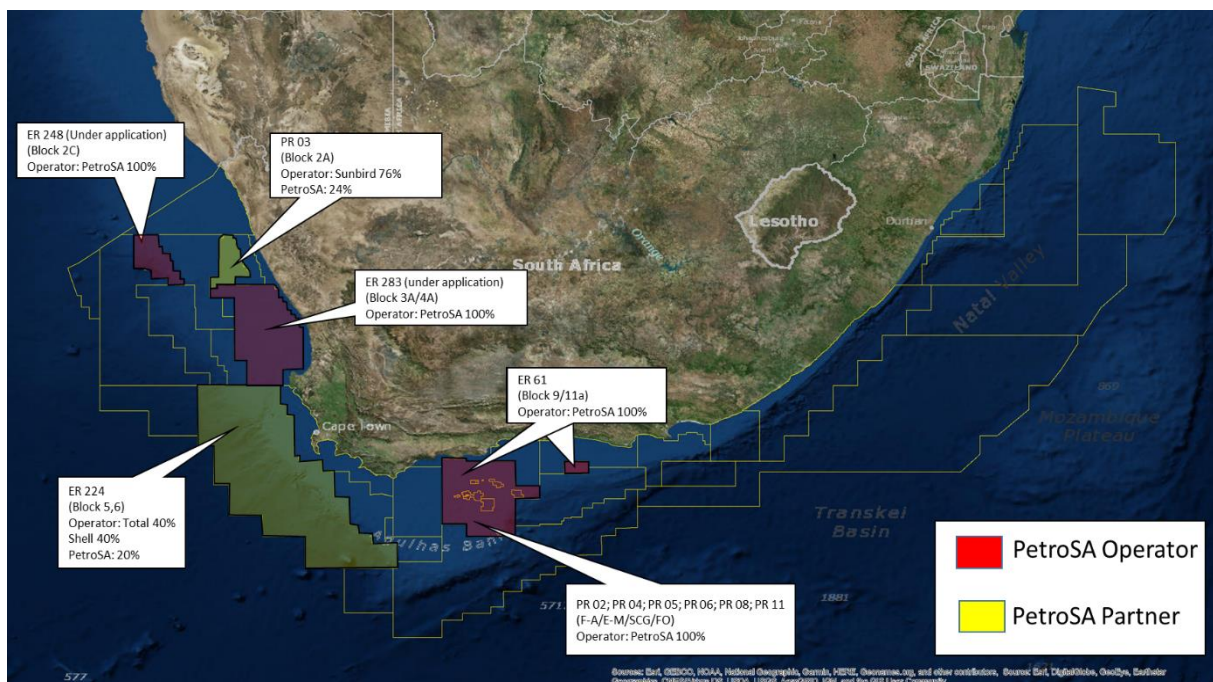


Figure 1: PetroSA assets offshore South Africa

3. MONETISATION OF INDIGENOUS GAS IN BLOCK 9 PRODUCTION RIGHTS

The objective is to extract and commercially monetise the remaining gas from existing wells. Opportunities also exist to extend gas production further by developing new fields and/or redeveloping fields in production rights near the existing offshore infrastructure.

The diagram below provides an overview of the offshore fields and infrastructure for gas production in Block 9.

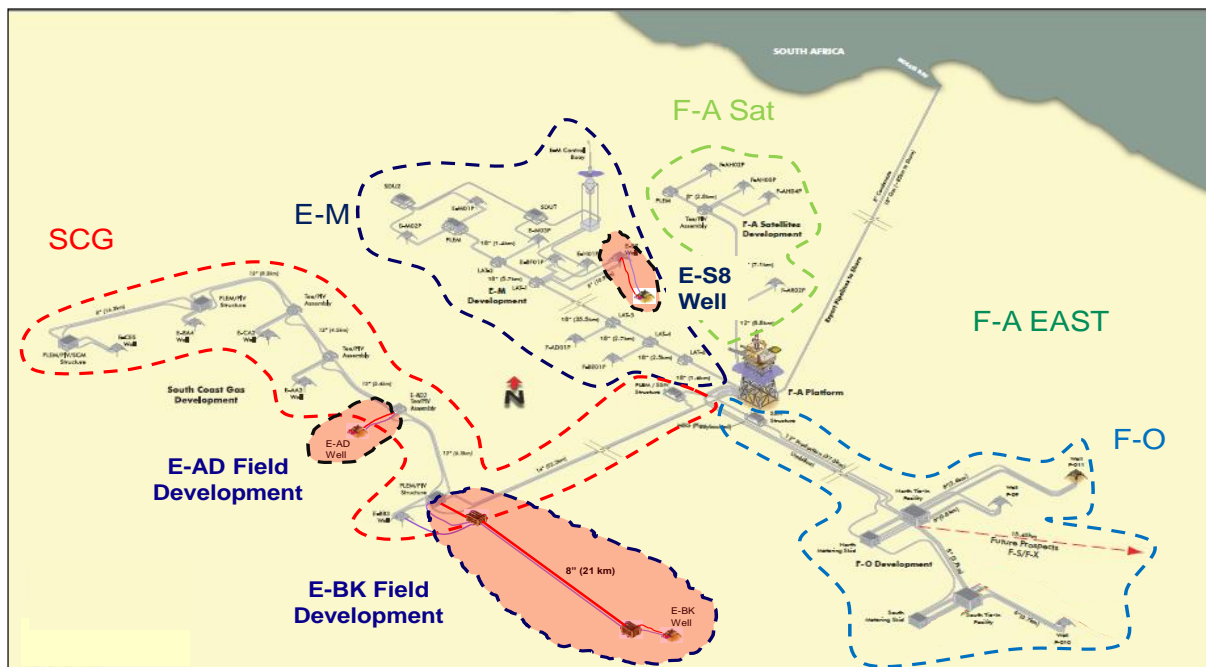


Figure 1: Offshore fields and infrastructure for gas production in Block 9

Integrated evaluation encompassing all disciplines (Geological, Geophysical, Production Engineering, Reservoir Engineering, Well Engineering, Completions and Commercial) will be required to determine the optimum solution, as it will require reviewing existing data (well history; pressures; rates; reservoir geology; petrophysics and geophysical data; previous reports/studies conducted) to improve the current understanding of the reservoir mechanisms with the aim of producing as much from the reservoirs as possible.

3.1 Enhancing Production on Existing Fields (Short Term)

The focus here is on the following wells and fields, where the current reservoir pressure is high enough to indicate the possibility of significant additional recoveries. A two-stage process is envisaged, initial data analysis, screening and ranking identifying those wells that warrant more detailed work/study:

Table 2: Profile of Wells

	Well	Reservoir Pressure (approx.) (psia)	Currently Producing Yes/No	Aquifer Water Production	Problem	GIIP (Bscf)	Gp (Bscf)
1	F-BE	2400	No	Yes	Aquifer water production Liquid loaded Gel blockage	63.5	19.4
2	E-H	3000	No	Yes	High aquifer water production; Possibly watered out.	48	16.6
3	E-BF	3000	No	Suspected	Liquid Loaded; Suspected MEG pumped downhole; Downhole flapper valve; Suspected aquifer water production	47.5	9.3
4	E-BB3	3400	Yes	Yes	Low production; Multiple zones; dual completion; Downhole sliding sleeves malfunction; Aquifer water production from one zone; Downhole gauges failed; Unable to allocate production or pressure per zone. High Skin. Shut-in causes impairment (suspected crossflow)	75.3	18.1
5	E-CA2	3300	Yes	No	Poor reservoir properties → Very low PI	36	4.4

	Well	Reservoir Pressure (approx.) (psia)	Currently Producing Yes/No	Aquifer Water Production	Problem	GIIP (Bscf)	Gp (Bscf)
					Condensate banking		
6	F-AH04 P	1400	No	Uncertain	Suspected liquid loaded	90	59.8
7	E-AA3	2600	Yes	No	Poor reservoir properties → Very low PI Condensate banking	26.4	6.8

The estimated cost to execute at least 4 of the above interventions is approximately R100 million. The interventions above mainly involve a remediation program of chemical injection. In the case where a rig is required to side-track an existing well or drill a new well, the cost will be approximately be \$50 million (R900 million) per well.

3.1.1. FO Field

Investigate remaining potential and apply latest technologies to extract the remaining reserves within the HP/HT faulted reservoirs.

Structurally the field comprises two heavily faulted domes separated by a saddle. The GWC extends well below the depth of the saddle and the field is believed to comprise a single hydrocarbon accumulation. The reservoir comprises shallow marine sand deposits of low porosity and permeability below the 1At1 unconformity. The average porosity in the reservoir is approximately 9% and reaches 16% in places. The average permeability is approximately 1 mD and reaches 100 mD in places. The reservoir is deep, with the crest at approximately 3,650 mTVDSS and a GWC at approximately 3,794 mTVDSS. Initial reservoir pressure was high at 7,770 psia and the reservoir temperature is approximately 155 °C. The gas is dry, with condensate/gas ratio of 4.5 stb/MMscf in the North and 0.3 stb/MMscf in the South.

Table 2: FO Fields

Wells	GIIP (Bscf)	Gp (Bscf)
F-O09P	141	43.3
F-O10PZ1	36	11.4
F-O11PZ1	33	7.0

The table below indicates potential volume withing the FO field, not connected to the production wells

Table 3: Potential Volume

Formation	GIIP (Bscf)		
	P90	P50	P10
TUSM (Upper Unit)	291	421	602
6RH (Middle Unit)	65	91	126
5RH (Lower Unit)	111	152	206
Total	466	663	935

The cost of a new well is approximately \$200 million. It is PetroSA's intention to contract a specialist company to investigate and propose the most suitable technologies to extract the maximum remaining reserves from the reservoirs. The cost of these technical studies is estimated to be in the order of \$1.5 million.

3.1.2. Oribi Oryx

Investigate remaining potential and develop a commercial solution to extract the remaining oil reserves. Production was ceased in March 2013 after it was deemed uneconomical to back and produce remaining reserves after the then FPSO underwent re-certification. The reservoirs comprise high quality deep marine sandstones in the '14A' sequence. The oil is under-saturated by 1,500 psia (Oribi) and 1,000 psia (Oryx) and is good quality, with a density of 38 °API (Oribi) and 40 °API (Oryx) and with GOR of 650 scf/stb (Oribi) and 900 scf/stb (Oryx).

Table 4: Oribi Oryx Reservoirs

Wells	OIIP (MMstb)	Produced (MMstb)
E-BT1	39	6.9
E-BT01P		20.3
E-AR02PZ1	41	13.7
E-AR03P		4.4

It is PetroSA's intention to contract a specialist company to investigate the viability of drilling infield wells to extract any possible remaining potential. The cost of these technical studies is estimated to be in the order of \$ 0.5 million.

The cost to drill and complete an infield well in the Oribi/Oryx field is approximately \$80 million.

3.2 New Field Developments/Re-developments (Medium Term)

PetroSA has identified the following fields for development/re-development (refer to *Figure 1*).

3.2.1. E-BK Field Development

The E-BK field is a condensate-rich gas accumulation, situated in the E-BK Production Right which is located approximately 135 kilometres offshore Mossel Bay within the central part of the Bredasdorp Basin. The E-BK field is planned to be developed with a single horizontal well (horizontal length of approximately 700m) connected via a 21 km subsea tieback to the tie-in point at E-BB on the SCG (South Coast Gas) pipeline. The gas and condensate will be transported via the existing SCG subsea facilities to be processed on the F-A Platform, from where the gas and condensate will be transported via the existing subsea export pipelines to the GTL refinery in Mossel Bay.

The estimated recoverable volume is between 33 and 53 Bcf of gas and 2.6 to 4.2 MMbbls of condensate. The field development cost of E-BK is approximately \$250 million at feasibility level.

3.2.2. E-AD Field Development

The E-AD field is an oil and gas accumulation in multiple horizon sequences, located in the South Coast Gas (SCG) Production Right. Although initially planned as part of the SCG field development plan, it remains undeveloped. The current field development plan targets only the gas/condensate accumulations, although an upper oil sequence has been identified. The notional field development includes the drilling of one well (E-AD2 well) and tying it via a 50 meter jumper to the E-AD tie-in point in the existing SCG pipeline.

The estimated recoverable volumes are between 9 and 25 Bcf of gas and 0.4 to 1.1 MMbbls of condensate. The field development cost of E-AD is approximately \$100 million at feasibility level.

3.2.3. E-S8 Infill/Redevelopment

The E-S field is a gas and condensate field currently being produced from one production well. Although geographically separated from the SCG fields, it forms part of the SCG Production Right. The opportunity includes redeveloping the field with a new well (E-S8) and tying it back to the existing ES subsea infrastructure on the EM subsea pipeline.

The estimated recoverable volumes are between 10 and 33 Bcf of gas and 0.2 to 0.6 MMbbls of condensate. The field development cost of E-S8 is approximately \$100 million at feasibility level.

3.3 New developments from Block 9/11A Exploration (Long term)

The focus here is on long term gas supply following from exploration activities in Block 9. Production Rights could be declared over areas where new discoveries are made during exploration, leading to new field developments to sustain long term gas supply to the onshore facilities in Mossel Bay. See Block 9 and 11a Exploration Right in Section 4 below.

4. FUNDING OF WORK PROGRAMS IN EXPLORATION AND PRODUCTION BLOCKS

The objective of this initiative is to ensure that PetroSA fulfils its work program commitments in terms of the exploration and production rights. Further to this PetroSA intends to drill exploration wells in its pursuit of oil and gas.

President Ramaphosa's investment drive seeks to attract investment of US\$100 billion to put the South African economy on a sustainable growth path. Operation Phakisa on the other hand, seeks to unlock our country's ocean economy, and has a target of 30 oil and gas wells to be drilled in the country over a period of 10 years. Total's gas and condensate discovery in February 2019, in Block 11B/12B, on the South Coast, and near PetroSA's producing Block 9, underscores the need for more aggressive exploration in South Africa. The funding process is a competitive process and seeks to invite financial institutions and other companies interested in funding PetroSA's oil and gas activities for a return on their investment. This is being done to attract much needed investment to enable PetroSA further explore and develop gas resources to augment feedstock to the GTL Refinery in Mossel Bay.

The following blocks require financial support:

4.1. Block 3A/4A Exploration Right

Block 3A/4A is located offshore West Coast of South Africa in water depths that range from shoreline to 500m. The block is currently under exploration, and the license to enter into the Initial Phase of an Exploration Right was granted on 5 February 2021. The minimum work programme associated with the initial phase includes Airborne Gravity and Magnetic acquisition and processing to the value of USD 2.5 million. The seven exploration wells drilled in the block indicated hydrocarbon shows and key information on reservoir presence within the leads. The block is directly on trend with oil discoveries in the area, for example the A-J1 oil discovery well. The current recoverable resource potential attributed to one of the identified prospects is approximately 109 MMbbls of oil. PetroSA currently holds 100% equity in Block 3A/4A.

In addition to the Gravity and Magnetic acquisition and processing (\$ 2.5 million) a 3D seismic survey of approximately 1000 km² is required (\$4 - 5 million) to delineate the reservoir and identify the drilling target. PetroSA would require approximately \$ 50 million to test the target.

4.2. Block 9 and 11a Exploration Right

Block 9 and 11a is situated offshore on the south coast of South Africa in the Bredasdorp Basin and Pletmos Basin respectively. These blocks are geographically separated but governed by one Exploration Right (ER61). Block 9 covers an area of approximately 22 000 km² with shallow water depths in the northern part of the block ranging from 50m -650m, while the southern part of Block 9 is in the deep-water setting ranging from 100m – 1250m. Block 11a covers an area of approximately 1200 km² with relatively shallow water depths ranging between 100m – 140 m.

There is a proven working petroleum system both in Block 9 and 11a, as demonstrated from multiple producing oil and gas fields as well as discoveries. In Block 9 there are producing oil and gas fields curved out of the exploration license and declared production licenses, there is discoveries and wells with oil/gas shows; while multiple gas discoveries exist in Block 11a. The current portfolio demonstrates more than 100 leads and prospects with estimated unrisks resources of approximately 4 TCF of gas. Some of the leads and prospects identified are on trend with current producing fields or in the similar play types as discovered. Few of the prospects have been matured to drilled-ready status.

Block 9 has been strategic to PetroSA as GTL Refinery life has been sustained by feedstock obtained from the acreage over the years. PetroSA currently holds 100% equity in the exploration license, which currently awaiting regulator award for the Third Renewal licensing round. The associated work programme commitment for the Third renewal Period is separated into firm commitment and contingent commitments and is detailed as follows:-

- a) A firm work commitment to reprocess approximately 1500 line km of 2D seismic data at a minimum cost of Seven Hundred Thousand US dollars (USD \$500 000).
- b) An additional contingent work programme includes the acquisition of a 3500 square km 3D seismic survey (US\$19 million) over the southern part of Block 9 and drilling 2-3 exploration/appraisal wells. A 3 well campaign would cost approximately US\$150 million.

5. WHO SHOULD APPLY?

PetroSA will give preference to companies who meet the following requirements:

- Demonstrate firm funding support
- Financial institutions
- Production sharing type financial model

6. EVALUATION CRITERIA

Applications will be evaluated on the basis of the below criteria. Entities/Applicants who previously submitted unsolicited proposals in the last 6 months need not resubmit, but should confirm that the proposals are still valid. PetroSA will allocate points and may negotiate with any or all of the top three (3) potential partners who are strategically the best fit for PetroSA and the CEF Group. In order to assist with an efficient evaluation process, please include all supporting documentation, where applicable.

Table 5: Evaluation Criteria

CRITERIA	DOCUMENTATION REQUIRED	MANDATORY / POINTS ALLOCATED
Company must be an established player, or credible financial institution.	Provide company profile or website address, letter of support and a name/s of contact person	Elimination criteria
High level Proposal submitted	Submit proposal aligned to brief	Elimination criteria
Capability to support the proposal	Sufficient funding to support proposal. Please provide details	Elimination criteria
<u>POINT SCORING EVALUATION CRITERIA</u>		
Proposal submitted aligned to brief or scope as described under items 1, 3 and 4)	Point allocation <ul style="list-style-type: none"> • 20 points for fully funded (all projects) • 10 points for partial funding • 0 points for no funding 	20
Feasibility of the proposed solution	Point allocation <ul style="list-style-type: none"> • Solution is implementable with no dependencies – 10 points • Solution implementable with immaterial dependencies – 5 points • Solution is not easily implementable and has significant dependencies – 0 points 	10
Terms and conditions for funding	Submit indicative term sheet or letter, outlining at least success fee, interest rate, duration, maximum funding and any other material conditions Point allocation <ul style="list-style-type: none"> • Solution is implementable with no dependencies – 20 points • Solution implementable with immaterial dependencies – 	20

CRITERIA	DOCUMENTATION REQUIRED	MANDATORY / POINTS ALLOCATED
	10 points <ul style="list-style-type: none"> • Solution is not easily implementable and has significant dependencies – 0 points 	
Guarantees Required – PetroSA would prefer to use current assets as guarantees for funding as opposed to state guarantees	Submit indicative term sheet or letter clearly indicating required guarantees <p>Point allocation</p> <ul style="list-style-type: none"> • 20 points for proposal based on PetroSA Upstream assets with no government guarantees • 10 points for proposal based on partial government guarantees • 0 points for proposal based 100% government guarantees 	20
Commerciality of Proposal	The top 3 commercially favourable proposals will score points <p>Point allocation</p> <ul style="list-style-type: none"> • 30 Points lowest offer • 20 points second lowest offer • 10 points for the third lowest offer • All other offers 0 points 	30

Interested parties who currently meet all the requirements and have previously (in the last 3 months) submitted all the information are not required to re-submit additional information. However, it is the Interested Party's responsibility to ensure that PetroSA has or receives the documentation required before the closing time and date.

7. CONTRACTING

On completion of the evaluation process, a preferred Funder/s will be announced and PetroSA will enter into an agreement. A detailed due diligence process will follow and the Funder/s will have access to the entire dataroom to develop the business case. PetroSA reserves the right to withdraw this RFP, reissue the RFP and/or divide the scope of work and contract with more than one Funder.

8. DECLARATION

By submitting an application (offer to partner with PetroSA and the CEF Group of Companies) you declares that

- (a) the information provided is true and correct;
- (b) the person submitting the application electronically is duly authorised to submit the application on your behalf;
- (c) the application is completed independently from, and without consultation, communication, agreement or arrangement with any competitor.
- (d) documentary proof regarding any proposal will be submitted to the satisfaction of PetroSA when called upon to do so;
- (e) the Potential Funding Partner consents to a “due diligence” (where necessary) being conducted on it by PetroSA or its authorised representatives regarding the Entities’ legal and empowerment status, technical ability, creditworthiness, security clearance, etc., and you undertake to co-operate fully in this regard;
- (f) You understand and acknowledge that any award made will be subject to the conclusion of a written agreement between the Parties.

9. ENQUIRIES

All enquiries should be addressed to Martin (Hennie) Fortuin at martinhennie.fortuin@petrosa.co.za.

10. SCOPE CLARIFICATION MEETING

PetroSA has scheduled a scope clarification meeting at 12:00 on 14 February 2023, on Microsoft TEAMS should any interested party wish to attend please inform the PetroSA representative by 15:00 on 13 February 2023, submitting the name/s and email addresses, to share the link.

11. SUBMISSION DATE & TIME

Please submit your application, proposal or letter of interest on or before **28 FEBRUARY 2023 at 15H00 (CAT)** by email to tenders@petrosa.co.za

Kind Regards,

C Bunting
Group Supply Chain Manager

APPENDIX A: ACRONYMS

API	The American Petroleum Institute gravity (density of oil)
bbl/d	Barrels per Day
CAPEX	Capital Expenditure
ER	Exploration Right
FPSO	Floating production storage and offloading
GWC	Gas-water contact
GTL	Gas to Liquids
JOA	Joint Operating Agreement
JV	Joint Venture
mTVDSS	metres in True Vertical Depth below the seabed
MMscf/d	Million standard cubic feet per day
MMbbls	Million stock tank barrels
OPEX	Operating Expenditure
PR	Production Right
Psia	pounds per square inch absolute
STB	Stock tank barrel
Tcf	Trillion cubic feet
TPOA	Transport, Processing and Operating Agreement
USD	United States Dollar
ZAR	South African Rand