



PetroSA

The Petroleum
Oil and Gas Corporation
of South Africa (Pty) Ltd
Reg. No. 1970/008130/07
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The information given below is an extract of the scope of work. **To access/open the full set of tender documentation, you must be registered on CSD.**

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Username: MAAA...
User Code: MAAA...
Password: newuser

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<http://www.procurement.petrosa.com/Downloads/Documents/SupplierSelfRegistration.pdf>

SCOPE OF WORK

ENQUIRY NO: CTT0000026846

DESCRIPTION: UNLOADING OF REACTORS AT PetroSA GTL REFINERY, MOSSEL BAY

1. INTRODUCTION

The Petroleum Oil and Gas Corporation of South Africa SOC Ltd, herein after called PetroSA, operate a Gas to Liquid Processing Refinery and related facilities in Mossel Bay, FA Platform.

This Scope of Work (SOW) outlines the requirements for the unloading of reactors services at the PetroSA GTL Refinery, Mossel Bay.

2. BACKGROUND

PetroSA requires a capable Supplier to safely unload, handle, segregate, drum and prepare spent catalyst from selected reactors at the PetroSA GTL facility in Mossel Bay, South Africa.

Directors:

Interim Chairman: Mr Tembinkosi Bonakele;
Ms Brenda Moagi; Mr Llewellyn Delpoit; Ms Ditsietsi Morabe
Group Chief Executive Officer (acting): Ms Nombulelo Tyandela
Group Chief Financial Officer (acting): Mr Linda Nene
Group Company Secretary: Ms Marlene Khumalo



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The catalyst shall be packaged in UN-certified, ISO-compliant export drums suitable for international transportation and shipment to the United States of America. Packaging and transport shall comply with all applicable international regulations governing hazardous goods, including ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road), RID (Regulations concerning the International Carriage of Dangerous Goods by Rail), IMDG (International Maritime Dangerous Goods Code), as well as relevant United States import requirements.

Tender drawings illustrating the internal configuration of the reactors, together with the relevant catalyst MSDS/SDS documentation, are provided as part of the tender documentation for bidder review and the development of their methodologies.

3. SUMMARY OF REACTOR INFORMATION AND CURRENT CONDITION

The following provides an overview of the reactors included within the scope of work, together with their approximate internal volumes and known operating or preservation conditions. While the vessels have been subjected to purging or cleaning processes as indicated, residual materials and hazardous atmospheres may still be present. This information is provided for guidance only and shall not relieve the Contractor of its responsibility to verify actual site conditions.

- **25VR101A** – Approximate volume: 3.3 m³ – Purged with nitrogen; however, residual carbon and volatile hydrocarbons may be present
- **25VR101B** – Approximate volume: 3.3 m³ – Purged with nitrogen; however, residual carbon and volatile hydrocarbons may be present.
- **31VR101A** – Approximate volume: 14.8 m³ – Purged with nitrogen; however, residual carbon and volatile hydrocarbons may be present.
- **31VR101B** – Approximate volume: 14.7 m³ – Purged with nitrogen; however, residual carbon and volatile hydrocarbons may be present.
- **32VR101** – Approximate volume: 26.5 m³ – Hot-swept with hydrogen and maintained under a nitrogen blanket; residual carbon and volatile hydrocarbons may be present.
- **33VR101** – Approximate volume: 5.9 m³ – Carbon has been removed by burning and the vessel is free of residual hydrocarbons.
- **33VR102** – Approximate volume: 8.6 m³ – Carbon has been removed by burning and the vessel is free of residual hydrocarbons.
- **33VR103** – Approximate volume: 14.0 m³ – Carbon has been removed by burning and the vessel is free of residual hydrocarbons.



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The Contractor shall satisfy itself as to the prevailing reactor conditions, catalyst condition, internal configuration, access constraints, and any associated hazards prior to the commencement of the work.

4. DETAILED SCOPE OF WORK

4.1 SERVICES REQUIRED

The Contractor shall provide all labour, supervision, specialist personnel, equipment, consumables, tools, transport, safety systems, and services necessary for the proper execution and completion of the work.

The scope of work shall include, but not be limited to, the following:

- Mobilisation and demobilisation of personnel, equipment, and associated support systems.
- Preparation and submission of detailed method statements, risk assessments, and rescue procedures for approval.
- Safe unloading of spent catalyst from the designated reactors.
- Handling of catalyst under inert and/or potentially hazardous conditions, as applicable.
- Execution of confined space entry activities, including continuous atmospheric monitoring.
- Catalyst extraction, recovery, screening, segregation, and collection.
- Separation, where reasonably practicable, of catalyst from ceramic balls, refractory material, debris, and other foreign materials encountered during unloading operations.
- Packaging, weighing, sealing, labelling, and palletisation of catalyst material in export-compliant drums.
- Management, handling, and segregation of waste streams and contaminated materials in accordance with applicable requirements.
- Provision and maintenance of all required safety, health, and environmental controls.
- Preparation and submission of final reports, including reconciliation of recovered material quantities.

4.2. TECHNICAL REQUIREMENTS

4.2.1 Safety and Reactor Entry Requirements

Certain reactors may contain residual hydrocarbons, carbon deposits, inert atmospheres, and oxygen-deficient conditions. The Contractor shall implement appropriate confined space and inert entry procedures and ensure that all activities are carried out in full compliance with PetroSA SHEQ requirements and all applicable legislation.



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The Contractor shall provide, maintain, and utilise suitable specialist equipment and systems necessary for the safe execution of the work, including but not limited to the following:

- Inert and confined space entry systems;
- Personnel life-support systems;
- Atmospheric and gas monitoring equipment;
- Emergency rescue and retrieval systems;
- Continuous communication systems for personnel within the reactors;
- Remote internal visual inspection equipment, where required;
- Dust minimisation and containment systems;
- Equipment for safe catalyst extraction, handling, and transfer operations

All equipment utilised within hazardous areas shall be certified and suitable for the applicable area classification and operating environment.

Continuous gas monitoring and communication systems shall remain fully operational at all times during entry and catalyst unloading activities.

The Contractor must ensure that emergency response and rescue arrangements are established and tested prior to commencement of entry activities.

4.2.2 CATALYST UNLOADING AND SEGREGATION

The Contractor shall unload catalyst from the reactors using methodologies appropriate to the prevailing reactor conditions and the condition of the catalyst.

The unloading methodology may include the use of vacuum extraction systems, pneumatic equipment, mechanical tools, and manual methods, as necessary, to ensure the safe and effective removal of catalyst material.

Catalyst Transfer and Recovery Requirements:

Given the precious metal content of the spent catalyst and the requirement to maximise recovery, the Contractor shall employ an unloading methodology that minimises catalyst losses, contamination and unnecessary handling.

Catalyst shall, to the maximum extent practicable, be recovered using a continuous vacuum extraction system or equivalent enclosed transfer system that transfers catalyst directly from the reactor into designated export drums or sealed intermediate collection vessels for subsequent drumming.



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The discharge of catalyst onto the ground, reactor platform, tarpaulins, skips, bins or any other open surface for subsequent collection and transfer shall not be permitted, except where specifically authorised in writing by PetroSA due to operational constraints that cannot reasonably be avoided.

The Contractor shall implement measures to:

- Minimise catalyst losses during extraction, transfer and packaging;
- Prevent contamination from foreign materials;
- Minimise dust generation and catalyst fines losses;
- Maintain traceability of catalyst recovered from each reactor; and
- Recover and account for any catalyst inadvertently spilled during unloading operations.

The Contractor shall describe the proposed catalyst transfer system in its methodology submission and demonstrate how catalyst losses will be controlled and quantified.

The Contractor shall:

- Minimise dust generation and limit personnel exposure during unloading operations;
- Prevent the uncontrolled release of catalyst fines or contaminated materials;
- Identify and segregate, where reasonably practicable, ceramic balls, refractory materials, and other foreign materials from the catalyst;
- Promptly notify PetroSA of any excessive contamination, unusual reactor conditions, or abnormal findings encountered during unloading activities;
- Prevent cross-contamination between different catalyst types and reactor contents at all times.

4.2.3 DRUMMING, PACKAGING AND EXPORT PREPARATION

Recovered catalyst shall be transferred into UN-certified, ISO-compliant export drums or other approved containers suitable for international transportation.

The Contractor shall provide all necessary handling, containment, and packaging systems required to ensure safe and compliant drumming operations.

The scope of work shall include, but not be limited to, the following:

- Weighing of recovered catalyst material;
- Transfer of catalyst into export drums;
- Sealing, closing, and securing of drums in accordance with applicable standards;



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- Labelling and marking in compliance with relevant transport and export regulations;
- Palletisation and securing of drums for transportation;
- Preparation of packing lists, drum registers, and identification schedules.

The Contractor shall ensure that all packaging, labelling, and documentation comply with applicable international transport regulations for sea, road, and, where applicable, air transport.

5. REPORTING REQUIREMENTS

The final report shall be submitted electronically in searchable PDF format and shall include all relevant supporting schedules, tables, photographs, weight records, drum registers, and any other documentation necessary to demonstrate the proper execution and completion of the work.

The Contractor shall submit a comprehensive final catalyst unloading report containing, as a minimum, the following:

- Reactor identification;
- Quantities of material unloaded per reactor;
- Drum numbers and corresponding weights;
- Estimated quantities of catalyst, ceramic materials, and waste recovered;
- Observed contamination levels;
- Reactor condition observations;
- Details of any safety incidents, deviations, or anomalies encountered;
- Confirmation that packaging has been completed in accordance with requirements and that materials are ready for export.

6. PetroSA RESPONSIBILITIES

PetroSA shall provide reasonable support to the Contractor to facilitate the execution of the work. This support is limited to the provision of available information, site access, and agreed site services, and shall not relieve the Contractor of its responsibility to execute the work safely and in accordance with the contract requirements.

PetroSA shall:

- Provide access to the site and the designated reactors;
- Make available existing reactor drawings and relevant catalyst MSDS/SDS documentation;
- Confirm the status of reactor isolation, purging, and preparation;



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- Provide access to available utilities, such as electricity, compressed air, and nitrogen, where reasonably accessible;
- Provide craneage, forklifts, scaffolding, or other site support services only where specifically agreed.

7. MANDATORY EXPERIENCE AND TECHNICAL SUBMISSION REQUIREMENTS

Bidders shall demonstrate proven experience in the execution of similar works. Failure to meet these requirements or to provide sufficient supporting information may result in disqualification.

Bidders must provide evidence of prior experience in the following:

- Reactor catalyst unloading operations;
- Inert and confined space entry under hazardous conditions;
- Handling of spent refinery or petrochemical catalysts;
- Hazardous material handling, packaging, and compliance;
- Preparation of catalyst materials for international shipment.

In addition, bidders shall submit a comprehensive technical proposal that clearly details the following:

- Proposed catalyst unloading methodology;
- Proposed methodology for catalyst and ceramic/refractory material separation;
- Expected separation efficiency and achievable recovery rates;
- Anticipated contamination levels following unloading and screening processes;
- Any limitations, constraints, or assumptions associated with the proposed methodologies;
- Any recommended pre-treatment requirements prior to refining or export.

The submission shall further include:

- A SHEQ (Safety, Health, Environment, and Quality) plan specific to the scope of work;
- A detailed resource plan, including personnel and supervision;
- A list of proposed equipment and systems to be utilised;
- A preliminary project schedule indicating key activities and durations;
- References and details of previous similar projects successfully executed.



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All information provided shall be sufficiently detailed to enable PetroSA to assess the bidder's technical capability, methodology suitability, and overall capacity to execute the scope of work.

8. CHANGES TO THE SCOPE OF SERVICES

The scope of the services shall be subject to changes by additions, deletions or revisions thereto by PetroSA. The Supplier shall be advised of any such changes by written notification from PetroSA describing the change. The Supplier shall promptly perform and strictly comply with each such change when so instructed by PetroSA. Any extra services resulting from such changes will be charged at the Supplier's normal or agreed rates.

9. ENQUIRIES

Any enquiries regarding this tender should be addressed to **Zonazihle Sityata** in the Tender Office at telephone no. **021 929 9108 / 044 601 2311** or e-mail address **zonazihle.sityata@petrosa.co.za**.