



PetroSA

The Petroleum
Oil and Gas Corporation
of South Africa (Pty) Ltd
Reg. No. 1970/008130/07
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User Code: MAAA...
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<http://www.procurement.petrosa.com/Downloads/Documents/SupplierSelfRegistration.pdf>

SCOPE OF WORK

ENQUIRY NO: AHT0000026827

DESCRIPTION: NITROGEN PURGING SERVICES AT THE 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 nitrogen purging services at the PetroSA GTL Refinery, Mossel Bay.

2. BACKGROUND

PetroSA requires a capable Supplier to undertake and provide the following Nitrogen (N₂) Purging services at the above-mentioned PetroSA facilities for unit 51 LPG HP Tank Farm:

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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Provision of a Nitrogen (N₂) Purging service for purging the PetroSA High Pressure Tank Farm LPG system, i.e., piping, and bullets with nitrogen gas to remove Oxygen to below PetroSA's required level to provide an inert atmosphere (2 x 211m³ bullets).

It is expected from the Supplier to provide the service expertise, advanced techniques, reliable equipment, manpower, and experienced project management, including preparation and execution plan of the works in accordance with a time frame of 4 days.

3. OVERALL SCOPE OF WORK

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

- Project pre-engineering in collaboration with the Client, including the development of method statements and the design of Nitrogen (N₂) purging packs.
- Supply of all necessary nitrogen purging equipment required to execute the service, including (but not limited to) a 16-ton Liquid Nitrogen (LIN) Portable ISO (International Organization for Standardization) storage tank with a capacity of approximately 21,000 litres, as well as competent personnel to perform the purging operation.
- Supply of the required quantity of Nitrogen (N₂).

4. DETAILED SCOPE OF WORK

4.1 SERVICES REQUIRED

The purging operation will be based on the pressure cycle method, whereby the vessel is pressurised with nitrogen and subsequently vented. This cycle is repeated until the target maximum oxygen concentration is achieved.

Two options were considered for purging the vessels:

Option 1: Determination of the number of pressure cycles and the mass of Nitrogen (N₂) required between 50 kPa and 1 bar below the vessel PSV setting, to reduce the oxygen concentration from 21 vol% to 0.5 vol%.

Based on this approach, the required purge duration and the volumetric flow rate necessary to achieve the target oxygen concentration were calculated.

It is estimated that each vessel (bullet) will require approximately 24 hours for purging. Including one day for mobilisation and setup, and one day for demobilisation, the total duration is estimated at four (4) days.

Based on the above, the total Nitrogen (N₂) requirement is estimated to be approximately 12 tons for vessels 51VD165A and 51VD165B.

Design, Equipment, and Certification Requirements:

- The Supplier shall provide a Process Flow Diagram (PFD) indicating all equipment from the ISO container (ISOTAINER) to the point of nitrogen injection. The diagram shall clearly identify all flexible connections, vendor-supplied hard piping, and distinctly define the battery limits and scope demarcation between the Supplier and the Client.
- The Supplier shall specify the method for controlling the vaporisation rate (e.g., orifice plate or alternative control mechanism) and provide the expected flow rate based on the selected vaporiser configuration.
- The design pressures for all equipment shall be clearly indicated.
- The Supplier shall provide the relief valve set pressures for both the ISOTAINER and the vaporiser circuit.
- All pressure relief valves (including their set pressures) and pressure control valves (including their set points) shall be clearly specified.
- The Nitrogen (N₂) supply pressure set point for the pressure control valve (PCV), as well as the required downstream relief valve set pressure, shall be 500 kPa.
(Reference: 51-VD165A/B Design Pressure = 1725 kPa; 51-VD162 Design Pressure = 500 kPa)
- The Supplier shall submit valid and up-to-date pressure test certificates, including expiry dates, for all equipment to be utilised. This shall include, but not be limited to, the ISOTAINER, Supplier-provided relief valves, flexible hoses, and any associated components.

4.2. TECHNICAL REQUIREMENTS

4.2.1 Technical Competence

The Supplier shall confirm in writing that all personnel are adequately trained and competent in the operation of the equipment being used, as well as in the safe handling of nitrogen.

The Supplier shall ensure that the following information is available and, where required, submitted to support the execution of the Nitrogen Purging service:

- Full details of the Supervisors and Technicians who will be responsible for executing the Nitrogen Purging operation, including their curriculum vitae (CVs), demonstrating relevant qualifications, experience, and competency.

The Supplier shall maintain a minimum operational crew at the GTL Refinery as outlined below:

Minimum Crew Requirements: GTL Refinery HP Tank Farm



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Designation	Quantity
Supervisor	2
Technician	4
Total	6

PetroSA shall compensate the Supplier for the minimum crew complement irrespective of whether work is actively being performed.

Any additional personnel requirements shall be mutually agreed upon in writing between PetroSA and the Supplier. PetroSA shall not be liable for the costs of additional personnel unless prior written approval has been obtained.

The minimum crew requirement equates to one (1) Supervisor and two (2) Technician per 12-hour shift.

4.2.2 SUPPLIER RESPONSIBILITIES

The Supplier shall demonstrate familiarity with, and possess the necessary skills, experience, and knowledge of nitrogen purging techniques and procedures.

The Supplier shall be required to submit their standard operating procedure for nitrogen purging. PetroSA will review and incorporate this into its site-specific procedure for the execution of the purging operation.

In executing the Nitrogen Purging operation, the Supplier shall be responsible for the provision of all resources necessary for the setup and completion of the service, including but not limited to the following:

- Supply of the required Nitrogen (N₂)
- Provision of all plant and equipment
- Provision of all necessary small tools
- Provision of suitably qualified and competent manpower
- Adequate supervision of all operations
- Provision of transport for personnel and equipment

5. PROCEDURES

The Supplier shall develop a comprehensive Nitrogen Purging Procedure, which shall be submitted to PetroSA's Blending and Storage Operations for review and formal approval prior to the commencement of any work. PetroSA will incorporate the Supplier's procedure into its site-specific procedure for the purging operation.



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6. WORKING CONDITIONS

6.1 NORMAL OPERATING CONDITIONS

A Purchase Order will be issued to the Supplier at the commencement of the Agreement, and all invoices shall be submitted against this Purchase Order.

Prior to commencing any work, the Supplier shall be issued with an official Works Order / Job Card. The relevant Works Order number shall be clearly reflected on all Supplier invoices, and a copy of the Job Card shall be included as a supporting document.

The Supplier shall be responsible for fully familiarising itself with the conditions and environment applicable to each job and shall plan and execute the work accordingly.

PetroSA shall have no obligation with respect to any work performed by the Supplier without a valid Works Order number.

Any amendments to an approved Works Order shall be authorised only through the issuance of a revised or supplementary Works Order.

The Supplier shall have no authority to alter the conditions of a Works Order. Any work performed outside the approved scope shall be for the Supplier's account.

Any rework required as a result of the Supplier's negligence, poor workmanship, or non-compliance shall be at the Supplier's cost, including all associated materials, labour, consumables, and certification.

6.2 Inclement Weather

In the event of adverse weather conditions, PetroSA shall compensate the Supplier for site personnel based on a minimum of four (4) hours or the actual number of hours the personnel were on site prior to being stood down, whichever is greater.

6.3 Prerequisites

All work shall be carried out in accordance with approved PetroSA procedures, standards, and specifications. The Supplier shall familiarise itself with these requirements prior to commencement.

The Supplier shall obtain all required permits to work before commencing any activities specified in the Works Order.

The Supplier shall provide valid calibration and certification records for all equipment used in the execution of the Services.

The Supplier shall not engage any subcontractors without prior written approval from PetroSA.



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Where subcontractors are approved, the Supplier shall ensure that all subcontractor personnel are competent, suitably qualified, and fully equipped to execute the work safely and in compliance with applicable requirements.

7. SITE ESTABLISHMENT

7.1 Equipment and Tools

PetroSA shall allocate a designated area for the setup of the Supplier's equipment, including nitrogen off-loading and operation of the Supplier's plant.

The Supplier shall ensure that the area is maintained in accordance with acceptable safety and housekeeping standards.

PetroSA reserves the right to conduct random safety inspections of the work area.

7.2 Fuel Supply

PetroSA shall not provide fuel for the Supplier's vehicles or equipment.

7.3 Materials

The Supplier shall provide all materials required for the execution of the Services, excluding consumables. Consumables will be provided by PetroSA.

The Supplier shall maintain sufficient stock levels to ensure that the execution of the Services is not delayed.

All materials issued by PetroSA on a free-issue basis shall remain the property of PetroSA, and any surplus shall be returned upon completion of the Services.

The Supplier shall be responsible for any loss or damage to materials resulting from negligence, misconduct, or poor workmanship. PetroSA shall not compensate for inferior or rejected materials.

The Supplier shall maintain a material register of all nitrogen purging equipment and materials on site and shall submit this register to PetroSA prior to commencement of work.

7.4 Plant, Equipment and Tools

The Supplier shall provide all plant, equipment, and tools required to perform the Services, excluding consumables.

7.5 Identification

All Supplier materials, plant, equipment, and tools shall be clearly marked for identification purposes. The Supplier shall be responsible for any loss or damage.



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7.6 Safety Equipment and Apparel

The Supplier shall ensure that all personnel are equipped, as a minimum, with the following safety equipment in good condition:

- Safety shoes
- Long-sleeve overalls
- Hard hats
- Rain suits
- Safety gloves
- Hearing protection
- Safety glasses
- Safety harnesses (for work performed on top of ISOTAINERS)

All safety equipment shall comply with SABS standards and be approved by the PetroSA Safety Department.

PetroSA will provide any additional site-specific safety equipment at no cost. Such equipment shall remain the property of PetroSA and will only be replaced due to normal wear and tear. The Supplier shall replace any equipment damaged due to misuse, negligence, or abuse.

8. SUPPLIED BY PetroSA

8.1 Utilities and Facilities (Free of Charge)

PetroSA shall allocate space within the contractor yard for the Supplier's use.

8.2 Utilities and Facilities (Chargeable / Controlled)

The Supplier shall apply for cell phone permits for use within the Blending and Storage production facilities. No additional communication services shall be provided by PetroSA.

9. WORKING HOURS

The Supplier shall ensure that the Services are available on a 24-hour basis until the completion of the nitrogen purging operation.

10. GENERAL

Any activities or conditions not defined within this Agreement shall be mutually agreed upon in writing prior to execution.



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Complete site clean-up upon completion of work shall form part of the scope of Services. Payment may be withheld in the event of non-compliance.

Any damage to PetroSA equipment resulting from negligence or poor workmanship shall be for the Supplier's account.

The Supplier shall ensure adequate protection of surrounding equipment while performing the Services.

Available electrical supply on site is 220V and 525V.

11. QUALITY ASSURANCE

The Supplier shall ensure that all Services, including workmanship, materials, documentation, tools, and equipment, comply with the requirements of ISO 9001:2015 and ISO 45001:2018.

12. QUALITY CONTROL PLAN (QCP)

The Supplier shall develop and implement a Quality Control Plan (QCP) covering all activities within the scope of work. The QCP shall identify all inspection, witness, and hold points requiring PetroSA intervention.

The QCP shall be submitted as part of a complete work pack for PetroSA review and approval prior to the commencement of work.

13 Safety Plan

The Supplier shall prepare and maintain a Safety Plan specific to this scope of work. The plan shall be reviewed and updated regularly and shall include, but not be limited to:

- Applicable safety standards and procedures in compliance with PetroSA SHEQ requirements
- Roles and responsibilities of key personnel regarding safety
- Appointment and responsibilities of Safety Officers
- Safety induction and training programmes, including meeting frequency
- Hazard identification, risk assessment, and mitigation measures
- Emergency response and first aid procedures
- Housekeeping requirements
- Personal protective equipment compliance
- Incident and accident reporting procedures

14 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



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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.

15 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**.