

Transnet Engineering ICT



Procurement of Uninterrupted Power Supply Units: Scope of Work & Requirements

Transnet Engineering ICT

Title	Supply and Install of UPS Scope of Work & Requirements
Functional Area	ICT Infrastructure
Executive Sponsor	Themba Mlotsa
Service Owner	Zinhle Nchoba
Authors	Daniel Hlahla
Version	1
Date Compiled	11/08/2024

Table of Contents

- 1. Definitions of Acronyms**
- 2. Document Version Control**
- 3. Document Purpose**
- 4. Business Context & Scope Overview**
- 5. Objectives**
- 6. Scope of Work**
- 7. SIGN-OFF**

1. Definitions of Acronyms

Glossary of Terms	
Acronym	Description
BAFO	Best and Final Offer
FMO	Final Mode of Operation
ICT	Information and Communications Technology
MSA	Master Services Agreement
Q&A	Questions and Answers
RFP	Request for Proposal
RFQ	Request for Quotation
SLA	Service Level Agreement
SOW	Scope of Work

2. Document Version Control

The document version history for this Network Technology Strategy is as indicated below.

Version:	Date changed:	Changed by:	Change description:
V1	11/08/2024	Daniel Hlahla	Document Review Update

3. Document Purpose

This document defines scope of work and requirements for the supply and Installation of the Uninterrupted power equipment in the specified 79 Transnet network sites.

4. Business Context & Scope Overview

1. With the escalation in occurrences of power downtime from Eskom the availability of power at Transnet Engineering sites have been severely impacted:
 - Poor condition of many generators at network sites
 - No or severely deteriorated state of UPS units and/or batteries at network sites
2. The UPSs are critical to ensure that network equipment does not experience a hard shut- down which significantly increases risk of total equipment failure, increase in rate of equipment failures and reduces equipment lifetime.
3. When network equipment fails due to no power, key Transnet Engineering ICT services cannot operate directly impacting especially port operations. As network equipment is end-of-life there are limited spare and replacement equipment is difficult to source.
4. The Network Equipment service provider recommends at least 4 hours backup power per site. Over time the lifetime of batteries deployed at the Transnet SD-WAN sites due to multiple charge- recharge cycles have decreased to less than an hour or none at all.
5. It is also necessary to dispose of the old UPS equipment in a safe and environmentally responsible manner.

6. Objectives

The service provider appointment is intended to accomplish the following objectives:

- Supply and Install Uninterrupted power supply units for the 79 x specified Transnet Engineering sites as per the specifications below:

AC INPUT	Nominal Input Voltage		220Vac
	Selectable Voltage range		AC 185V~270V
	Frequency Range		50Hz/60Hz (Auto sensing)
	Inverter Efficiency (Peak)		97%
INVERTER OUTPUT	Output voltage waveform		Pure sine wave
	Output Voltage Regulation		220Vac \pm 5%
	Output Frequency		50Hz
	Power Factor		1
	Transfer Time		10ms typical
	Peak Efficiency		92%
	Nominal DC Input Voltage		48VDC
	Cold Start Voltage		46VDC
	Output Short Circuit Protection	Line mode	Circuit Breaker
		Battery mode	Electronic Circuits
BATTERY	Battery voltage		48VDC (\pm 0.5)
	Floating voltage		54V
CHARGER	Charging Current (UPS) @Nominal Input Voltage		Default:30A; MAX:60A
	Bulk Charging Voltage		56.4Vdc
	Floating Charging Voltage		54Vdc
	Charging Algorithm		3-Step
GENERAL	Mounting		Rack mount
	Display		LED+LCD
	Safety Certification		CE
	Operation Temperature Range		0 ⁰ to 40 ⁰ C
	Storage Temperature		-15 ⁰ to 60 ⁰ C
	Dimensions (W*H*D) (mm)		400×468×86.3
	Net Weight (kg)		10.0

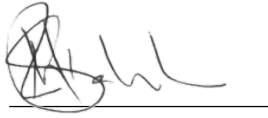
7. Scope of Work

The Service provider is to provide Transnet Engineering with the assessment, supply, logistics, material, installation and testing of UPSs in the Transnet Engineering specified sites including the provision of the Certificate of compliance. The costing for the UPSs shall be completed in the spreadsheet titled.

Task 1. Assessment of site	Deliverables
<p>Objective:</p> <ul style="list-style-type: none"> • Perform due diligence and assessment on the 79 sites. • Advise Transnet of any hosting requirements (power feed, HVAC, access) 	<ul style="list-style-type: none"> • Due diligence report for all 79 sites • Hosting requirements for all 79 sites • Project plan • OEM confirmation letter that Service provider is appropriately certified to install and commission equipment.
Task 2. Supply of UPS Equipment	Deliverables
<p>Objective:</p> <ul style="list-style-type: none"> • Per each of 79 sites: Supply the UPS, Inverter, Batteries, cabinets, management software and charger unit as per specification provided above 	<ul style="list-style-type: none"> • Equipment procured and delivered • Delivery note
Task 3. Installation of UPS Equipment	Deliverables
<p>Objective:</p> <ul style="list-style-type: none"> • Installation and testing of the complete unit <p>Activities performed by electrician:</p> <ul style="list-style-type: none"> • Install and connect the UPSs to the existing power grid • Setup monitoring software and services • Functional, failover testing <p>Transnet Responsibilities:</p> <ul style="list-style-type: none"> • Testing and Installation sign off 	<ul style="list-style-type: none"> • Installation roster • Testing results (functional and failover) • Provision of the Certificate of Compliance
Task 4. Decommissioning of old UPS Equipment	Deliverables
<p>Objective:</p> <ul style="list-style-type: none"> • Removal and disposal of old batteries, UPSs, inverters, cables, racks, etc. 	<ul style="list-style-type: none"> • List of equipment decommissioned and removed from site to a Transnet Engineering identified site within the premises.

8. SIGN-OFF

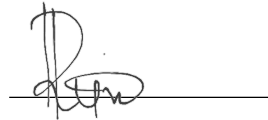
Provision, delivery, Installation, testing and disposal (old) of UPS equipment to 79 Transnet Engineering sites.



Compiled by: Daniel Hlahla

Title: Infrastructure Manager

Date: 12/08/2024



Approved by: Zinhle Nchoba

Title: Acting Executive Manager

ICT Date: 13/11/2024