

 Eskom	Scope of Work	Hendrina Power Station
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1. INTRODUCTION

Hendrina Power Station Operating Department periodically replaces critical Assets for continued operations to execute operating activities safely and effectively.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document outlines the Scope of Work (SOW) to be undertaken by the successful bidder for the supply and deliver of assets, selected through the Tender Technical Evaluation process. The SOW covers comprehensive technical specifications in detail in the scope of work section of the document.

2.2 PURPOSE

The purpose of the document is to outline the requirements for supply and delivery of Assets for Operating Department at Hendrina Power Station.

2.2.1 Applicability

This document is applicable to Hendrina Power Station.

2.3 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.3.1 Normative

- [1] 240-168966153 Generation Tender Technical Evaluation Procedure
- [2] 240-105691858 Materials Management Safe Work Procedures Transportation Requirements for Material Handling

2.3.2 Informative

- [3] ISO 9001 Quality Management Systems
- [4] 32-1-34 Eskom Procurement Policy

2.4 DEFINITIONS

Term	Definition
Vacuum Truck	A vacuum truck, also known as a vacuum tanker, vac-truck or vac-con truck, is a heavy-duty vehicle that uses a powerful pump to create a vacuum in a storage tank allowing atmospheric pressure to push liquids, sludges, or solids through suction hoses into the tank for transport. These trucks are commonly used to collect sewage, fecal sludge, industrial liquids, or animal waste slurries and transport them to treatment or disposal sites.
Excavator	An excavator is a heavy construction machine used for digging, lifting, and moving materials. It typically consists of a hydraulic arm, a bucket, and a rotating cab, allowing it to perform various tasks efficiently.
Mobile Oil Purifier	A mobile oil purifier is a portable device used to purify industrial oils, such as transformer oil, hydraulic oil, and hydraulic oil. It operates by removing

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Term	Definition
	moisture, gases, and impurities from the oil through advanced filtration and vacuum dehydration technologies.
HP Cleaning Machine	A high-pressure cleaning machine is a specialized equipment used for cleaning tasks that require significant pressure to remove dirt, grime, and other contaminants.
Forklift	An industrial vehicle, a material handling device used for lifting and transporting loads over short distances. It is equipped with a hydraulic lift mechanism and two forks that slide under the load, usually on pallets.
Turbine Oil Transfer Pipe	An oil transfer pipe is a pipeline used to transport oil, gas, or other chemicals. It is typically made of materials such as carbon steel, alloy steel, or other durable materials, and is designed to withstand high temperatures, corrosion, and pressure.
Gas Analyzer	A gas analyzer is a device designed to identify and quantify specific gases within a mixture. It measures the concentration of gases such as oxygen (O ₂), carbon dioxide (CO ₂), carbon monoxide (CO), nitrogen oxides (NO _x), methane (CH ₄), and other hydrocarbons, depending on the application. Gas analyzers are essential for monitoring air quality, controlling industrial processes, ensuring safety, and complying with environmental regulations

2.4.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary).

2.5 ABBREVIATIONS

Abbreviation	Description
WD	Width
LG	Length
DP	Depth
mm	Millimetre
M	Meter
V	Volt
W	Watt
RPM	Revolutions per Minute
KW	Kilowatt
C	Celsius
STL	Steel
FT	Feet
L	Litre
TET	Technical Evaluation Team
O ₂	Oxygen
H ₂	Hydrogen
H ₂ S	Hydrogen Sulphide
NH ₃	Ammonia

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Abbreviation	Description
WD	Width
LG	Length
DP	Depth
mm	Millimetre
CO2	Carbon Dioxide
CO	Carbon Monoxide
SO2	Sulphur Dioxide
Ah	Amp Hour
DC	Direct Current
AC	Alternating Current
Hz	Hertz
T	Ton

2.6 ROLES AND RESPONSIBILITIES

Senior Technician – Responsible for defining the technical specifications and scope to be executed by the contractor, as well as ensuring that sound engineering practice is followed.

Operating Support Manager – Responsible for the procurement document(s) required to establish a contract with the contractor deemed capable of executing the scope.

Contractor – Responsible for providing all the services required for the execution of the full scope of work.

2.7 PROCESS FOR MONITORING

N/A

2.8 RELATED/SUPPORTING DOCUMENTS

N/A

3. SCOPE OF WORK

The following items and quantities are required:

No	Quantity	Short Description
3.1	1	Vacuum Truck
3.2	2	Excavator
3.3	3	Mobile Oil Purifier
3.4	2	HP Cleaning Machine
3.5	1	Forklift
3.6	1	Turbine Oil Transfer Pipe
3.7	30	Gas Analyzer

Detailed description of Items Below:

3.1 Vacuum Truck with pipe accessories
Vacuum Truck – HPVR 1000 Liquid Ring

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Tank Capacity	12 500	Litres
Material	Stainless Steel	316L
Wall Thickness	6 (minimum)	mm
Suction	4 060	m ³ /h
Service Water Tank	2 000	Litres
Pump Capacity	2 083	m ³ /h
Ports (Suction & Discharge	DN150	
ADR compliant		
Freight Carrier – UD E26		
Model	CWE370	
Mass	8 660	Kg
Overall Length	9 375	mm
Overall Width	2 500	mm
Engine Capacity	10 837	cm ³
Type	Turbo Intercooled	
Power at r/min	278 @ 1 900	kW
Torque at r/min	1 734 @ 1900	Nm
Brake System	Full Air	
Electronic Brake System	ABS	
Fuel Tank Capacity	405	Litres
Cab Type	Standard roof single	
Seatbelts	Yes	
Air Conditioning	Yes	
Radio	Yes	
On-Board Computer	Multi Display Function	
Rear view mirror	6	
Tilt cab	Mechanical	
Operator Training	Yes	
Maintenance Manual	Yes	
Test Certificate	Yes	
Service Plan	Yes	3 years

3.2 Excavators

Tank Capacity	12 500	Litres
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Make	Volvo	
Model	EC55B Pro	
Engine: Water-cooled Volvo 4-cylinder diesel engine		
Model	D3, 1A	
Gross power	38.8	kW
Maximum Torque	194 – 210	Nm
Bore x Stroke	94 x 110	Mm
Electrical System		
Rated voltage	12	V
Battery Capacity	12 @ 100	V @ Ah
Alternator rating	12 @ 55	V @ Ah
Starter motor	3	kW
Weight	5 500	Kg
Width	1 920	mm
Height	2 560	mm
Total Length	6 110	mm
Bucket Capacity	70 – 231	Litres
Bucket Width	600	mm
Cab		
Air Conditioning	Yes	
Roll Over Protection Structure	Yes	
Tilt Over Protection Structure	Yes	
Seatbelt	Yes	
Radio	Yes	
Operator Training	Yes	
Maintenance Manual	Yes	
Test Certificate	Yes	
Service Plan	Yes	3 years

3.3 Mobile Oil Purifiers – Vacuum Dehydrator

Oil Tank Capacity	30 000	Litre
Purifier Throughput	150	L/min
Oil Grade	ISO 3104, 1994 Fuel Oil, GST ISO 46, Regal	

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	46, Regal R&O, ISO Grade 46	
Oil Operating Temperature	40 -60	°C
Maximum Moisture Contamination	45 000	ppm
Required Moisture Content	< 100	ppm
Maximum Particle Count	28/27	
Required Particle Count	16/13	
Installation Requirements	Mobile, Crane hooks	
Power Supply	380	V
Frequency	50	Hz
Power Cable Length with Welding Plug	>30	m
Training to Operators	Yes	
Maintenance Manual	Yes	
Filters	3	Microns
Beta Ratio	≥200	
Oil Spillage containment	Yes	
Sample Valves (Inlet & Outlet)	Yes	
Flexible Oil Supply and Return Hoses	>30	m
Operator Training	Yes	
Maintenance Manual	Yes	
Test Certificate	Yes	
Service Plan	Yes	3 years

3.4 High Pressure Cleaning Unit

Pump Type	T3-3015 – 3000 Series	
Plunger Diameter	22.86	mm
Working Pressure	1000	Bar
Flow Rate	56	L/min
Power Supply	112	kW
High Pressure Pump		
Pump Head Material	Stainless Steel Alloy	
Lubrication	Water base	
Diesel Engine		
Type	John Deere	

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Model	CD6068	
Power	150	HP
Coupling	Centaflex A140	
Platform	Single Axle Trailer Mounted	
Bypass Valve	Yes	
Safety	Dual Rupture Disc Holders Low Level cut out switch	
Tank	200 L	
Tank Filter	25	Micron
Filter type	Bags	
Boost Pump	Yes	
Control	Deep See Control Panel	
Accessories		
Dump Gun 1000 Bar	2	JS-65745
Gun Adapter	2	UJS-55224
WB- 1000Bar Hose 20m 1/2" BSPF	10	HB-20-15-1/2-01
1000Bar Hose to Hose Connector	10	UCS-1/2BM-1/2BM
Orbijet Premium Kit	2	JS-63305
Spares		
3015 Spares Package	2	JS-SP3015-15
25Micron Filter Bags	100	UFD-PE-PO25S
1000Bar Bypass Valve Cartridge	3	S-50234
1000Bar Gun Cartridges	2	JS-50902
UHPX Nozzle for Orbijet 33	8	JNB-UHPX30
Operator Training	Yes	
Maintenance Manual	Yes	
Test Certificate	Yes	
Service Plan	Yes	3 years

3.5 Forklift

Rated Load Capacity	3 000	Kg
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Engine Type	Diesel	
Engine Size	3 168	Litre
Rated Output (at 2 500rpm)	45	kW
Torque (at 1 800 rpm)	193	Nm
Fuel Tank Capacity	70	Litre
Transmission	Power Shift	Forward/Reverse
Drive Type	Internal Combustion	
Standard Lift Height	3 000	mm
Fork Dimension	1 150 x 130 x 45	mm
Overall Length	2 850	mm
Overall Width	1 225	mm
Overall Guard Height	2 150	mm
Wheelbase	1 760	mm
Self-Weight	4 255	Kg
Travel Speed	19	Km/h
Lifting Speed	430	mm/sec
Lowering Speed	500	mm/sec
Front Tyres	28*9-15, 12PR	
Rear Tyres	6.50-10, 10PR	
Operator Comfort	Adjustable seat	
	Lumbar support	
	Ergonomic steering	
	Vibration dampening	
Safety Features	Seat belt	
	Beacon light	
	Reverse alarm	
	Tilt cylinder booting	
	Stability Assist System	
Visibility	Clear-view mast	
Battery	12/100	V/Ah
Operator Training	Yes	
Maintenance Manual	Yes	
Test Certificate	Yes	
Service Plan	Yes	3 years

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3.6 Turbine Oil Transfer Pipe

Material	Rubber	
Reinforcement	Steel	
Maximum operating pressure	300	Bar
Temperature Rating	-40 - +100	°C
Length	50	M
Internal Diameter	50	mm
Outer Diameter	60	mm
Product	Hydraulic Oil	
Couplings	Quick disconnect	

3.7 Gas Analyzer

Type	Multigas	
Application	Confined spaces	
Dimensions	0.08 x 0.18 x 0.04	m
Weight	500	g
Battery	Rechargeable	
Alarm	Audible	
Gases	O2, H2, H2S, NH3, CO2, CO, SO2	
Calibration Certificate	Yes	3 years

4. HEALTH, SAFETY, ENVIROMENT AND QUALITY REQUIREMENTS

The SHEQ requirements stipulated here are minimum requirements.

5. OTHER REQUIREMENTS

All items will be delivered with a Goods Information Package, compromising of the following:

1. Equipment Specifications
2. Operating Manual
3. Maintenance Schedules/Manual
4. Material Safety Data Sheet for lubricants, hazardous substances.
5. Warranty, where applicable.
6. Test Certificates, where applicable.
7. Calibration Certificates, where applicable
8. Operator Training to be provided within 2 weeks of Delivery date for all equipment. A certificate of attendance to be issued to attending operators. **25% of total Prices will be retained until training has been completed.**

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9. Training Quantities expected:

Vacuum Truck	4
Excavators 5T	2
Mobile Oil Purifier	4
HP Cleaning Machine	4
Forklift 3T	4
Turbine Oil Transfer Pipe	0
Gas Analyzers	10

10. Goods to be delivered to Hendrina Power Station fully functional and manufacturing completed.
Functional tests to be conducted for acceptance upon delivery.

6. EFFECTIVE DATE

This document will be effective from the date that the contract is authorised and will be valid for a period of one year.

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