



REQUEST FOR EXPRESSION OF INTEREST: SPECIALIST ADVISORY SERVICES FOR EACOP

REFERENCE NO: 0010007468

TotalEnergies East Africa Midstream B.V. (Company) Tanzania, an Oil and Gas company, invites experienced and reputable companies to express their interest to supply up to 3 grid power quality acquisition devices, in order to be able to do long term monitoring of the TANESCO Grid performance in different areas of the Network, at the same time to the East African Crude Oil Pipeline (EACOP) project.

The EACOP project involves the construction and operation of a buried, cross-border pipeline to transport crude oil from the Lake Albert area in Uganda to the eastern coast of Tanzania for export to international markets. The pipeline will run from Chongoleani, Tanga Region, in Tanzania, to Kabaale in Hoima District, Uganda. The length of the pipeline is 1,443 km, of which 1,147 km will be in Tanzania.

EACOP is investigating to connect to TANESCO Grid and require assessing the Grid power quality.

BRIEF DESCRIPTION OF THE SCOPE OF THE SERVICES:

Supply of up to 3 grid power quality acquisition devices, in order to be able to do long term monitoring of the TANESCO Grid performance in different areas of the Network, at the same time.

Potential suitable devices are:

- A-Eberle PQbox 200 & equivalent.
- ELSPEC G4500 or equivalent.

Accessories will be required for connection to Grid Provider connecting points.

Minimum technical requirements:

POWER QUALITY PORTABLE ANALYZERS SPECIFICATIONS PORTABLE POWER QUALITY RECORDER/ANALYSER C/W HARD CASE AND TESTING LEADS

TANZANIA ELECTRIC SUPPLY COMPANY LIMITED SUPPLY OF ADVANCED PORTABLE POWER QUALITY ANALYZER WITH COMPUTER SOFTWARE

TECHNICAL SCHEDULE FOR: PORTABLE POWER QUALITY ANALYSER

ITEM	DESCRIPTION	UNIT	MINIMUM REQUIREMENT	QUARANTEED
1.0(a)	Manufacturer		Supplier to specify	
1.1(b)	Country of origin		Supplier to specify	
1.1	Standards		IEC, IEEE, NRS as per - Part 1 General Clause 2.0 standards shown above	
1.2	Type/ features		Three phase type 1. High accuracy 2. Direct measurement of voltages up to 660 VLL 3. Supports 20A mini-clamps and the LEM FLEX 4. sensors that provide current measuring 5. capability of 30A/300A/300A in a single Package. 6. Internal DC battery for continued operation in the event of a power failure 7. Power supply: 100-240VAC, 45-65 Hz, 30 VA 8. Battery: rechargeable 12V/1.2Ah DC. Allows 9. 120 minutes of continuous backup operation when fully charged 10. Two independent port communication 11. Long term memory for data logging & Trending 12. waveform compatibility up to 13. cycles of pre-fault, and up to 16 pre-fault 14. Programmable sag, swell detection 15. Programmable transients voltage and currents detection 16. Harmonic power and energies 17. Power direction of harmonics 18. Programmable voltage dip/sag, swell source (Fault) location detection	
1.3(i)	Basic Measurements - Voltage, - Current - Frequency - Pf		Voltage: V; Current: A, An; Frequency: Hz (50); Unbalance: V, A; Max amp. Max/min V, A, An, Hz;	
1.3(ii)	Voltage Measurements		Voltage probes shall be connected to the instrument via connectors V1/ V2 / V3 / VN. The voltage inputs shall support direct voltage measurement of up to 660 VLL, or greater when an external Potential transformer is used.	
1.3(iii)	Current Measurements		Must have heavy duty connectors to be used to connect the current clamps to the instrument. Two current measurement options shall be provided: • 20 Amps mini-clamps • LEM FLEX sensors for 30A/300A/3000A measurements	
1.4	Multi-Function Power & Energy Meter		Real time cycle-by-cycle measurement of high accuracy, true RMS voltage, current, power, demand and energy with continuous sampling of 32, 64, 128, 256 samples per cycle Revenue accurate meter Meets IEC62053-22 Class 0.2S or ANSI C12.20 (Class 0.2S) Advanced Time Of Use (TOU) feature (16 Energy sources include external digital pulses, up to 4 seasons, 4 daily profiles, 8 Tariffs, flexible automatic calendar) for any complex billing scheme. KYZ or KY output and LED indication for calibration and test	
1.5	Energy Import/Export		KVh, KVAh, KVARh, PF: Total, Per phase; KYZ Pulse Output; KYZ Pulse Input; Total: Absolute, Net; Time of use (TOU); Pulse Input;	
1.6	Harmonics Analysis		Total Harmonic distortion for Voltage and Current and up to the 63rd individual harmonic for V, I, P, Q Including directional power harmonics (Load or Source), V4 angle, K factor, vector diagram and symmetrical components, Inter harmonics, sub harmonics	
1.7	Basic communication (Number of ports Communication Protocol)		IEC 104 (TCP/IP), RS422/485	
	Additional communication Features		Optically isolated RS232 port 10BaseT Ethernet 56K modem. Shall supports industry standard Modbus RTU & ASCII, DNP V3.0, Modbus/TCP, DNP3/TCP protocols and shall have unique "Assignable Register Map" allows users to assign registers from different ranges into a single contiguous Modbus. Shall address space or a DNP Class 0, 1, 2, or 3 poll, limiting the amount of data passed over the communications line and therefore making efficient use of the available bandwidth Firmware upgrade via communications, eliminating chip replacement	
1.8	Case Construction		The rugged, heavy duty case allows the instrument to operate in the substation Environment and the harshest field conditions. • Case material: Polypropylene • Case temperature rating: -20 C to 60 C	
1.9	Power Quality Analysis software		Shall be compatible with Windows 7, 8 and 10. Shall be easy to use remote configuration software. Shall support offline programming to allow easy downloading of a standard configuration to multiple meters. Shall Supports scheduled polling viewing of real-time data, and automatic retrieval of historical and waveform Logs. Shall provides the ability to export waveform and data logs to COMTRADE and PQDIFF formats Must be able to perform Advanced Power Quality Analysis in Windows environment for easy multi-tasking Simple offline instrument setup	
2.0	Displays		Shall have 3 lines high-visibility 7- segment LED display, fully visible under bright sunlight Shall have two 4-digit and one 6-digit windows Simultaneous display of 3 phase parameters for quick phase balance assessment Shall have 6-digit Energy readings Configurable 8-segment LED % Load Bar mimics analog meter needle Energy pulse LED Communications activity LEDs Kilo and Mega LEDs for scaling indicators Must have menu driven selection and password protected device configuration, Automatic scrolling with adjustable scroll time or fixed display User configurable, simple two-button Demand RESET operation Adjustable update time from 0.1 to 10 seconds	
2.1	STATUS INPUTS		2 optically isolated status inputs shall be provided for status monitoring with timestamp, pulse counting and external demand or time synchronization. Each digital input shall be allocated as a status input to monitor external contact status, or as a pulse input to sense Pulses from an external source. One of the status inputs can be configured to receive an external synchronization pulse indicating the beginning of a new demand interval for power demand measurements. It shall also be configured to receive time synchronization pulses from a precise external time source.	
2.2	Relays		2 relays shall be provided for energy pulsing (KYZ), Alarming and remote control.	
2.3	External Time Synchronization		Provides 1 msec time resolution via IIRIG-B time code input or satellite clock for common time base As an SNTP client, it can accept periodic synchronization of the meter clock from an SNTP server	
2.4	Real-Time Clock		Accuracy: maximum error 5 seconds per month @ 45 C	
2.5	Log Memory		Standard onboard memory: 2GB or more	
2.6	IIRIG-B Port		• Optically isolated IIRIG-B Port • Time code signal: unmodulated (pulse-width coded) • Connector type: BNC • Recommended cable: 51 Ohm low loss - RG58A/U (Belden 8219 or equivalent), TNC connector • Recommended GPS time code generator: Master clock GPS-200A	
2.7	Internal Memory storage capacity		• 4.0 GB	

MINIMUM REQUIREMENTS:

Companies expressing their interest are invited to document their request with:

- Proof of registration with the Tanzania Revenue Authority and Tax (TRA) Clearance Certificate for the latest year available.
- Application for registration with the EWURA Local Supplier Service Provider (LSSP) database at the time of submission of the response to this expression of interest is strongly recommended.
- Compliance with Local Content Regulations, 2017 and Local Company definition.
- To be an Official Agent or Seller of the Device Manufacturer in Tanzania.
- Fully efficient with Technical English requirements to manage the device and associated trouble shooting /maintenance with Device Manufacturer.

Companies which have the ability, capacity and resources to implement the activities listed above should express their interest by sending together with the documents stated in the above section through an email to ecop-tz.eoi.1000001@totalenergies.com (max. email size 20Mb) on or before **15:00** hours East African Time (EAT), on **18th Feb 2022**. Email address should be **0010007468**

Note: The EACOP project will review and assess the documents provided by the interested companies to derive a list of prequalified companies. Only prequalified companies will receive, subject to signature of a Non-Disclosure Agreement (NDA), invitation to submit bids in furtherance of the call for tender process. All Expression of Interests should be submitted in English language.