



KENYA ELECTRICITY GENERATING COMPANY LIMITED

**TENDER FOR SUPPLY OF STEAM FLOW METERS FOR OLKARIA I POWER
STATION KGN-GDD-023-2018**

10th April 2018

ADDENDUM NO. 1:

In accordance with the tender mentioned above, KenGen hereby issue addendum No. 1:

1. Revised Price Schedule and Schedule of Requirements

Bidders are advised to refer and incorporate the below Revised **Schedule of Requirements (page 31)** and **Revised price schedule (page 32)** in their bid document and disregard the ones in the tender document

2. Tender Extension Date

The tender has been extended from 12th April 2018 at 10.00 a.m. to **7th May 2018 at 10.00 a.m.**

3. The following addendum serves the purpose to clarify in details the tender requirements of the software part in the tender to the bidders. The software for the steam flow meters shall be deployed in the geothermal steam field at Olkaria 1 power Station but visible in the operator's workstations and visual displays through the corporate LAN.

The purpose of this tender is therefore to supply 3 smart steam flow meters, design and implementation of steam flow metering automation solution through advanced metering infrastructure technology at the KenGen Olkaria 1 Power plant.

The system is comprised of two major components:

- i. The data collection software/system/infrastructure
- ii. The fixed/wireless network data collection units (meters).

The software solution provided for the steam flow meters to have the following capabilities:

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	<p>Manufacturer:</p> <p>The software MUST be manufactured by an ISO 9001 certified OEM company. The supplier of the steam flow meters and the OEM of the software must guarantee with a warranty. Specifics must be submitted with the proposal.</p>	
2.	<p>Architecture:</p> <p>The software architecture will be a client-server with the software package installed on the host (server) system at the utility site (server room).</p> <p>The hosts' software must be configurable for either a standalone installation or operate in a client/server environment.</p> <p>The software must be web enabled.</p>	
3.	<p>Protocol:</p> <p>The software MUST be using industry standard protocol capable of communicating with other industry standard steam flow meter systems compatible with those already installed in KenGen (e.g. Rosemount, Yokogawa, Sierra, ABB, Honeywell etc.)</p> <p>The means of communication between the Meter Interface Unit (MIU) installed at the meter site, RTU and the host (server) software must be detailed in the proposal. It must also demonstrate the ability to receive, store and communicate meter readings to the host software for further use and analysis.</p> <p>The meter reading system must be capable of meeting the current and future meter reading needs within KenGen.</p>	
4.	<p>Data storage:</p> <p>A data management system shall be incorporated to manage the validation of data and computation of various parameters. The solution is expected to have a</p>	

	<p>strong data management system that is robust, and can be programmed to accommodate different models that will be used for steam field data analysis.</p> <p>The software must be capable of receiving/collecting/storing meter readings with the capability to store.</p> <p>Each reading record must contain a MIU ID and a time stamp of the reading.</p>	
5.	<p>Interoperability, compatibility and scalability: The system must be interoperable, compatible and scalable with other industry standard meters and also support the migration of technologies.</p>	
6.	<p>The software should have the following capabilities:</p> <ul style="list-style-type: none"> • Log faults and send alarms in case of meter/sensor failure. • Show in real time locations of the meters and sensors on a schematic drawing and geographical map. • Provides database backup/restore functions. • Provide a powerful custom report generator. • Run self-diagnostic tests upon booting up of the system or on request to ensure the good functionality of the system. 	
7.	<p>Technology: The system should:</p> <ul style="list-style-type: none"> • Be capable of transmitting and receiving meter readings using wireless and fixed network. • Utilise modern technology such as a handheld reading device and/or a mobile reading unit and/or a targeted and/or emails/sms and/or web portal. 	
8.	<p>Security:</p> <ul style="list-style-type: none"> • Roles and profiles of users • User access management • Ability to provide a straight forward tool for tracking and managing the meter and sensor assets. 	

9.	<p>Integration:</p> <ul style="list-style-type: none"> • Ability to integrate to existing DCS systems installed in KenGen e.g. Siemens Simatic, Honeywell Experion, Mitsubishi diasys netmation etc. • Ability for the software to integrate with other business systems e.g. Enterprise Resource Planning (SAP), Microsoft Exchange, and Geospatial Information System (ArcGIS). 	
10.	<p>Network:</p> <p>The system architecture must be flexible to allow communications via common public communication networks such as fiber, wireless, Ethernet, radio and cellular.</p>	
11.	<p>Reporting:</p> <p>Ability to provide</p> <ul style="list-style-type: none"> • Various forms of reports as may be required by users e.g. meter reading management reports, usage analysis reports (flow profiling, leak detection, tamper detection and backflow conditions), on-demand/off-cycle reads and system management diagnostics. • Trending • Schematic diagram • Geospatial presentation 	

HARDWARE INFRASTRUCTURE

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	<p>Server Hardware requirements:</p> <p>Unit: 1</p> <p>Rack mountable: 2U rack server</p> <p>Processor: 2 Intel® Xeon®</p> <p>Processor sockets: 2</p> <p>Support for HA clustering</p> <p>Virtualization-ready</p>	

	Memory: 12 DIMM slots and DDR4 memory 16GB	
	Storage: SATA/SAS 1TB Hot-plug hard drives	
	Power Units: hot-plug PSU Hot-plug redundant power	
	Network: 4 x 1 GbE	
2.	Virtualisation: VMware® ESX® Operating System: Microsoft Windows Server 2012 or higher Database: Windows SQL Database.	
3.	Control Room client/workstation requirements: Units: 2 Client OS: Windows 10 Processor: Intel i7 @ 2.4 GHz RAM: 8 GB Hard Drive: 500 GB 5400 RPM hard drive. The tenderer shall deploy a host computer/laptop to be utilised permanently at the Olkaria 1 control room.	
4.	Human Machine Interface (HMI): Operator Control and Monitoring Systems. Units : 4 visual display units Wireless: WiFi Network: 1 x 1 GbE Modern ultra-thin bezel design Resolution: 4K UHD Panel Technology: IPS TFT with W-LED backlight Digital connectivity: 1 x DisplayPort; 1 x HDMI 2.0; 2 x DVI-D; 4 x HDMI; USB ver. 3.0 (3 down / 2 up) Ecological Standards: ErP compliant; RoHS compliant Energy efficiency class: D; LED backlight technology Display mount: A sturdy single flat panel ceiling mount, with universal adapter, that's ideal for any ceiling application whether TV viewing or digital signage. The supplier shall bear the cost of mounting and installation.	

5.	<p>NB: In compliance with KenGen server environment, the server will be in line with existing infrastructure or standard cabinet enclosures.</p> <p>As a minimum, the supplier shall warranty for 3 years from date of shipment for defects in material, workmanship, support and maintenance and extended server hardware 2years OEM warranty to KenGen (total warranty and support 5years).</p>	
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INSTALLATION AND SUPPORT

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	Complete project schedule for installation and operating proposal will be included for all of the supplied hardware and software equipment.	
2.	A quality assurance program by the OEM based on industry best practices should be included in the proposal.	
3.	Complete installation and operating instructions will be included for all of the supplied hardware and software equipment.	
4.	The vendor shall be responsible for fully training Utility personnel in the system mapping, deployment planning and installation of the fixed network LAN and WAN components	
5.	Proposal must include any additional costs for training and assistance to install and begin operation of the system. The Vendor will also inform the customer of what pre-installation activities are to be completed and what support material will be needed for the initial installation.	
6.	Define acceptance criteria for system deployment.	
7.	The supplier must have the capability of continuing the support through the use of a Service Level Agreement (SLA). Supplier shall submit a draft SLA to be discussed and signed by the two parties.	

TECHNICAL OBSOLESCENCE

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	The systems including communication technologies, which are at a risk of technical obsolescence over the next few years (minimum 5 yrs.) and over the Operating life of the system shall be identified and reported. This may also include end-of-sale and end-of-support policies governing the proposed technologies.	
2.	The compatibility between the various elements of the system need to be considered and mitigation options, not be limited to periodic update from OEM/System supplier, shall be indicated in detail.	
3.	The supplier shall provide support for a minimum of 5 years. In case of any obsolescence the software shall be able to be migrated to the latest release without any challenges.	

FACTORY ACCEPTANCE, SITE VISIT AND TRAINING

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	The qualified bidders shall organize for a Factory Acceptance Test (FAT) and/or site visit of the entire solution before delivery. The FAT shall be carried out at the manufacture's ISO 9001 manufacturing facility premises which shall be specified in the tender document. A brief company profile of the manufacturer/facility/site shall also be attached in the response by the bidders.	
2.	There shall be a presentation for the proposed system. This shall form part of the evaluation. The dates shall be communicated to bidders.	
3.	The training must be supplied by the system manufacturer. Training on the system shall be proposed with the venue and tuition fees for 2 steam field	

	<p>personnel and 2 ICT technicians for a period of at least 5 days.</p> <p>A proven, detailed training plan must be developed by the vendor with approval by the OEM based on results and industry best practices.</p>	
4.	<p>The site visit to KenGen Olkaria 1 Power Station is mandatory.</p> <p><i>The date shall be 20th April 2018 at Olkaria 1 power Station as from 10.00 a.m.</i></p>	

EXPERIENCE

	KenGen Requirements	Tenderer's Offer (MUST FILL)
1.	The qualified Vendor will have a minimum of 10 years' experience with meter reading systems.	
2.	A customer reference list shall be enclosed with the proposal. Minimum 3 similar projects in last 5 years.	

PERFORMANCE WARRANTY

In evaluating bid submittals, warranty coverage will be considered. The Vendor shall be required to state its warranty and/or guarantee policy with respect to each item of proposed equipment. The procedure for submitting warranty claims must also be provided.

In addition to warranty periods, Vendors are required to supply information on required or optional maintenance programs beyond the warranty period for both hardware and software.

The tenderer MUST demand that the OEM to submit a letter of guarantee/warranty directly to the address:

Kenya Electricity Generating Company

P.O. BOX 47936 - 00100

NAIROBI, KENYA.

Tel: +254 (02) 3666504, 3666000

Fax: 254 (02) 3666565

Email: cbore@kengen.co.ke ,

Cc: jombongi@kengen.co.ke , emunyiri@kengen.co.ke

ACKNOWLEDGEMENT OF ADDENDUM 1

We, the undersigned hereby certify that the Addendum is an integral part of the document and has been incorporated in the tender document:

Signed:

Tenderer:

Date:

SECTION VI

REVISED SCHEDULE OF REQUIREMENTS

No.	DESCRIPTION	QUANTITY	DELIVERY SCHEDULE
1	FLOW TRANSMITTER	3 PCS	Within 3 months
2	GATEWAY	1 PC	Within 3 months
3	STEAM FLOW METER SOFTWARE INFRASTRUCTURE	1 PC	Within 3 months
4	FLANGE	3 PCS	Within 3 months
5	WELDING PIPE OUTLET FITTING	6 PCS	Within 3 months

**SECTION VII
REVISED PRICE SCHEDULE FOR GOODS**

STEAM FLOW METERS FOR OLKARIA I POWER STATION

No.	Description	Quantity Required (Pieces)	Unit Price	Total Price
1.	<p style="text-align: center;">Flow Transmitter</p> <ul style="list-style-type: none"> • Wireless capability, tuned to gateway in item No. 2 below • All connection hardware to raised DN50 class 300 316SS flange. • Flo-tap annubar assembly • To be mounted on horizontal carbon steel run pipe DN450 • 316 SS sensor material • 0.025% of span accuracy • Battery powered with a lifespan of over 10 years 	3		
2.	<p style="text-align: center;">Gateway</p> <ul style="list-style-type: none"> • A Wireless Gateway to be mounted in the control room, configured, calibrated, tuned and ready for mounting. 	1		
3.	<p style="text-align: center;">Software</p> <ul style="list-style-type: none"> • Steam flow meter software infrastructure 	1		
4.	<p style="text-align: center;">Flange</p> <ul style="list-style-type: none"> • Weld neck Class 300 Flange DN50 complete with RF studs and bolts to ASME B16.5 	3		
5.	<p style="text-align: center;">Socket welding outlet fitting</p> <ul style="list-style-type: none"> • 2 1/2' x 2' run pipe DN450 to ASME B16.5 	6		
Sub-Total				
Discount (if any)				
Add 16% VAT				
Other charges such as Transport, Handling etc.				
Total Cost Delivery Duty Paid (DDP) to Olkaria Power Station				

Signed:

Tenderer:

Date:

