



KENYA ELECTRICITY GENERATING COMPANY PLC

RFx 5000008626

KGN-HYD-050-2021

**TENDER FOR REHABILITATION OF AN OLD WATER PLANT AT KAMBURU
POWER STATION**

(Youth Enterprise Only)

17th December, 2021

ADDENDUM NO. I

In accordance with the “the Tender for rehabilitation of an old water plant at Kamburu Power Station” KenGen hereby issues Addendum No.I as follows;

I. PART II: WORK REQUIREMENTS

ADDITIONAL SPECIFICATIONS

NO	DESCRIPTION	ADDITIONAL INFORMATION
PUMP CONTROL PANELS		
1	Supply, install and commission new control panel for the clean water transfer pumps	The panel will control two (2) pumps each rated as below. Transfer pump specifications are as below. <ul style="list-style-type: none">• Type: CR 32-12 A-F-A-E-HQQE• Power: 22.0KW• Speed: 2947 rpm• Max Head: 232.5 m• Head: 184.4 m• Flow rate(Q): 30 M³/hr Provide a selector switch for switching between pump 1 & 2
2.	Supply, install and commission new control panel for filter pumps.	The panel will control two (2) each rated as below. Filter pump control motor have the specifications below; <ul style="list-style-type: none">• Power: 15KW• Speed: 1455 rpm

		<ul style="list-style-type: none"> Phase: 3 phase Connections: star(660V,17.3A), delta(380V,30A) Provide a selector switch for switching between pump 1 & 2
25.	BILL NO 8: CLEAN WATER TANK	Hack the exterior of the clean water tank wall and plaster using sand to cement ratio of 3:1 before paint works.
3.	BILL NO 11: WATER PLANT EQUIPMENTS	
	Provide four spare chemical dosing pumps	Dosing pumps specifications are as below: <ul style="list-style-type: none"> Type: Grundfos DMX 115-3 B-PVC/E/C-X-GIU3U3XEMNG Liquid temperature range 0 - 40 °C flow rate at 50 Hz-115 l/h Number of dosing heads- 1 Power input -0.09 kW Frequency - 50 Hz.
	Provide one spare clean water transfer pump	Transfer pump specifications are as below. <ul style="list-style-type: none"> Type: CR 32-12 A-F-A-E-HQQE Power: 22.0KW Speed: 2947 rpm Max Head: 232.5 m Head: 184.4 m Flow rate(Q): 30 M³/hr
	Provide treatment chemicals to last for 6 months after the one-month DLP	Water treatment chemicals for a 6-month period is as below: <ol style="list-style-type: none"> Chlorine 180KGs Rock alum 3,000KGs Magadi Soda 1,500KGs

2. REVISED BILL OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL COST
BILL No. 1: MOBILIZATION COST					
I	Site house, materials and tools	Activity	1		
BILL No. 1: SUPPLY OF PUMP CONTROL PANELS					
I	Supply, install and commission new control panel for the clean water transfer pumps. The panel should have all the following features: - <ul style="list-style-type: none"> ➤ Pump controls ➤ O/L protection ➤ Phase failure protection ➤ Complete pump motor starters and associated controls /protection. ➤ The control supply shall be monitored and failure of supply 	Each	1		

	<p>shall generate an alarm that shall be displayed</p> <ul style="list-style-type: none"> ➤ All pump motor protection failures shall be displayed for ease of trouble shooting. ➤ Manual mode operation, provide lamp integrated push buttons for the controls. ➤ Auto-mode operation ,level sensors for this operation to be supplied and installed at clean water storage tank 				
2	<p>Supply, install and commission new control panel for filter pumps. The panel should have all the following features:-</p> <ul style="list-style-type: none"> ➤ Pump controls ➤ O/L protection ➤ Phase failure protection ➤ Complete pump motor starters and associated controls /protection. ➤ The control supply shall be monitored and failure of supply shall generate an alarm that shall be displayed ➤ All pump motor protection failures shall be displayed for ease of trouble shooting. ➤ Manual mode operation, provide lamp integrated push buttons for the controls. 	Each	1		
BILL No. 2: WORKS ON OLD DISUSED TANK					
3	<p>Carefully demolish the existing slab on the old and disused masonry tank. Ensure that the vertical wall of the tank is not at all affected by the demolition. Clear all the debris and transport to the designated spoil site.</p>	m ²	22.05 m ²		
4	<p>(a) Carefully break the wall of the old disused tank at a point to be shown by the client to accommodate a door frame size 2100x900mm</p>	m ²	1.89		
	<p>(b) Using Y12 and Y8 rebars, cast a ring beam above the opened door area. The height of the beam should be 300mm, length 1500mm while thickness will be same as the wall.</p>	m ³	0.067 5		
	<p>(c) Carefully break the wall diametrically opposite the door</p>	m ²	1.08		

	opening to create a window opening size W1200xH900mm				
	(d) Using Y12 and Y8 rebars, cast a ring beam above the opened window area. The height of the beam should be 300mm, length 1800mm while thickness will be same as the wall.	m ³	0.081		
5	Hack the interior and exterior of the old tank wall and plaster using sand to cement ratio of 3:1 and finally ensure very smooth finish of the interior using cement and water only. Exterior will be plastered and only have a steel trowel finish	m ²	2x41		
6	Hack the old tank floor to remove the old screed. Apply new screed not more than 25mm at cement sand ration of 1:3 and apply a very smooth finish of grade one black oxide	m ²	22.05		
7	Using 50x50x3mm square tubes and Z par lines fabricate roofing trusses as per drawing No. 4 provided and roof the tank using gauge 30 box type dark green roofing sheets by use of roofing screws.	Sum	Sum		
8	Fill in the gap between the roofing sheets and the vertical wall using a 1:3 ratio mortar and plaster to perfectly match both interior and exterior finish.	Sum	Sum		
9	Fabricate steel frame using 1½"x1"x3mm and ½"x ½"x3mm square tubes to fit the cut door opening - item 4(a). This must be as per drawing No. 1 provided	Sum	Sum		
10	Fabricate steel frame using 1½"x1"x3mm "square tubes to fit cut window opening - item 4(C). This must be as per drawing No. 2 and as per section " DD " provided	Sum	Sum		
11	Fabricate a steel door to fit above frame (item 9) using 1½"x1"x3mm square tubes and fix it onto the frame using 3 No. plated bushes size 1" as per drawing No. 1 attached.	Sum	Sum		
12	Paint the fabricated door (item 11 above) using metal gray gross primer paint followed by 2 coats of high gross Kengen purple paint. (Dura coat or crown paint only)	m ²	3.78		
	Fabricate a steel window to fit above frame (item 10) using 1" Z bars and 1"				

13	tee bars. The window should have 2 openable windows and fixed using 2No. plated bushes. Supply and fix on the fabricated window two window stays and the two window fasteners. These must be “KENS” type. See drawing No. 2	Sum	Sum		
14	Paint the fabricated window (item 13 above) using metal gray gross primer paint followed by 2 coats of high gross Kengen purple paint. (Dura coat or crown paint only)	m ²	2.16		
15	(a) Apply two under coat of white emulsion paint either from Dura coat” paint or “Crown” paint on the tank exterior and interior.	m ²	2x41		
	(b) Paint the inside of the tank structure using silk vinyl “Dura coat” paint or “Crown” paint. (2 coats). Colours will be agreed upon prior to painting (2 coats)	m ²	41		
	(c) Paint the outside side of the tank structure using Vinyl matt “Dura coat” paint or “Crown” paint. Colours will be agreed upon prior to painting (2 coats)	m ²	41		
BILL No. 3: WORKS ON RAW WATER TANK					
16	Wire brush exterior of the tank to remove anything loose and paint the raw water tank using Vinyl matt “Dura coat” paint or “Crown” paint. Colours will be agreed upon prior to painting (2 coats). Emulsion white under coat paint must be applied first (2 coats)	m ²	111.2 0		
BILL NO 4: WORKS ON SEDIMENTATION TANKS					
17	Repair by hacking the exterior of both sedimentation tanks and plaster using 3:1 sand to cement ration after lining the whole tank with chicken wire.	m ²	2x52. 2		
18	Paint the outside of both sedimentation tanks using Vinyl matt “Dura coat” paint or “Crown” paint. Colours will be agreed upon prior to painting (2 coats). Emulsion white under coat paint must be applied first	m ²	2x52. 2		
19	Hack the interior of the sedimentation tank (one towards the station) as necessary and as directed by clients representative. Repair by plastering using sand to cement ratio of 3:1 and	m ²	52.2		

	waterproof cement and finally ensure very smooth finish of the tank interior using waterproof cement.				
20	Supply and replace all the wooden timber on the walk way on top of the two sedimentation tanks with 6"x2" blue gum timber. Using similar timber, bind all the timber on both sides along the entire length of the walkway. Total area of walk way is 20.4m ²	m ²	20.4		
21	Supply and repaint all the guard rails including the timber supporting metallic structure with appropriate black paint as agreed upon with the clients representative	Sum	Sum		
BILL NO5: NEW DOSING PUMPS SHED					
22	Construct a shed for dosing pumps using local quarry stones and open on the front side. The shed should be constructed outside the existing one. <ul style="list-style-type: none"> ➤ Roofing should be flat roof inclining to the back and using 50x50x3mm square tubes and gauge 30 box type dark blue roofing sheets should be used to roof the shed ➤ Plaster both inside and outside of the shed and paint as per item 15 above 	Sum	Sum		
BILL NO 6: WORKS AT MAIN PUMP HOUSE					
23	<ul style="list-style-type: none"> ➤ Hack as necessary the interior of the pump house. Plaster the hacked areas and finish to the original smoothness. ➤ Paint both the inside and the outside of the pump house as per item 15 above ➤ Replace the pump house double doors (2No.) with metallic double doors fabricated as per item 9 and 11 above. ➤ Paint both the door frame and the steel door as per item 12 above 	Sum	Sum		
BII NO 7: SMALL PUMP SHELTER (BEHIND THE MAIN PUMP HOUSE)					
	Carefully hack all the cracks on the pump shelter behind the main pump house and repair with mortar ratio 3:1 <ul style="list-style-type: none"> ➤ Repair the pump shelter floor by hacking and screeding (1:3 				

24	<p>cement to sand ratio) and finally applying very smooth floor finish with grade I black oxide</p> <ul style="list-style-type: none"> ➤ Fabricate a steel frame and door for this pump shelter as per item 9 and 11 ➤ Paint both the shed and the door/frame as per item 15 above 	Sum	Sum		
BILL NO 8: PAINTING CLEAN WATER TANK					
25	Hack the exterior of the clean water tank wall and plaster using sand to cement ratio of 3:1 before paint works.	m ²	80		
26	Paint the outside of clean water storage tank using Vinyl matt "Dura coat" paint or "Crown" paint. Colours will be agreed upon prior to painting (2 coats). Emulsion white under coat paint must be applied first	m ²	80		
BILL NO 9: WATER PLANT ATTENDANTS' OFFICE					
27	<ul style="list-style-type: none"> ➤ Hack the attendant's office floor to remove the old uneven floor. ➤ Redo the floor by 1:3 cement sand ration screed. Using grade I black oxide, ensure very smooth floor finish. ➤ Repaint both the inside and outside of the attendants house as per item 15 above 	m ²	20		
		m ²	2x44		
BILL NO 10: WATER PLANT COMPOUND EARTH WORKS					
28	Remove by excavating all the top loose soil to maximum depth of 150mm and as directed by the client representative. Stockpile good soil material for re-use as necessary. Any soil not to be used must be disposed at the spoil site.	m ³	177		
29	<p>Supply enough hardcore from local quarry to cover the excavated area above (item 25)</p> <ul style="list-style-type: none"> ➤ Carefully arrange the hardcore to cover the whole excavated area. ➤ Using a 8ton roller compactor, properly compact the arranged hardcore as directed by the clients representative. A rabbit compactor shall be used in 	m ³	177		

	areas where roller compactor is not applicable				
30	<p>Transport enough quarry dust from the crusher site (to be shown) and carefully spread it to cover the entire hardcore area</p> <ul style="list-style-type: none"> ➤ Using the 8T roller compactor, thoroughly compact the dust so as to fill into all the spaces in the hardcore. A rabbit compactor shall be used in areas where roller compactor is not applicable ➤ The compacted quarry dust should be 50mm thick finally 	Sum	Sum		
31	<p>Supply heavy duty machine cabro blocks as per attached photo No.1 to cover the entire compacted area.</p> <ul style="list-style-type: none"> ➤ Carefully arrange the cabro blocks and fill the gaps between with quarry dust 	m ²	1176		
32	<p>Excavate and construct a 200x150mm "U" channel storm water drain behind the attendants office (running from West to East) and join them using cement sand mortar ratio 1:3. This drain should incline towards the existing main storm water drain. Depth of the channel will vary with the inclination.</p> <ul style="list-style-type: none"> ➤ Install 2" drain waste pipes at a spacing of 1200mm from one another on the south side (stone pitched) such that any seepage water drains into above storm drain. Drain must be as per drawing No. 5 attached 	m	50m channel		
33	<p>Supply and lay precast kerbs on a 50mm thick blinding concrete (mixture ration 1:3:4). The Kerbs should go round the entire paved area (Cabro area) and as directed by clients representative. Join all the kerbs with 1:3 ratio mortar. See drawing 6 for required kerbs dimensions</p>	Sum	Sum		
34	<p>Allow a provision sum of extra works including but not limited to cabro works, drainage works, painting works, chemical store roof work, storm water drainage works and as may be directed by client's representative.</p>	Sum	Sum		
BILL	WATER PLANT EQUIPMENTS				

NO					
II:					
35	Provide four spare chemical dosing pumps similar to the existing ones	Each	4		
36	Provide one spare Matendeni clean water transfer pump similar to the existing one	Each	1		
37	Provide one spare Kamburu staff camp clean water transfer pump similar to the existing one	Each	1		
38	Supply treatment chemicals for 6months after the one month DLP. Any supply should have expiry date clearly indicated	Sum	Sum		
	SUB-TOTAL IN KSHS				
	VAT				
	TOTAL CARRIED TO FORM OF TENDER (KSHS)				

Tenderer's Name: _____

Authorized Signature: _____

Date: _____

Company Rubber Stamp: _____

ACKNOWLEDGEMENT OF ADDENDUM NO I.

We, the undersigned hereby certify that the Addendum is an integral part of the document and the alterations set out in the clarification have been incorporated in the tender proposal.

Signed.....

Tenderer.....

Date.....